PB-251 574

# DETERMINATION OF PARTICULATE EMISSION FACTORS FOR BOILERS AND INCINERATORS - BRONX AND MANHATTAN

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Environmental Conservation Research, Incorporated

Prepared for:

Environmental Protection Agency

February 1974

DISTRIBUTED BY:

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U. S. DEPARTMENT OF COMMERCE

106020

PB 251 574

EPA-450/3-76-008
FEBRUARY 1974

# DETERMINATION OF PARTICULATE EMISSION FACTORS FOR BOILERS AND INCINERATORS BRONX AND MANHATTAN

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SPRINGFIELD, VA. 22161

U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Air and Waste Management
Office of Air Quality Planning and Standards
Research Triangle Park, North Carolina 27711

**TECHNICAL REPORT DATA**
*(Please read Instructions on the reverse before completing)*

| 1. REPORT NO. | 2. | 3. RECIPIENT'S ACCESSION NO. |
|---|---|---|
| EPA-450/3-76-008 | | |

| 4. TITLE AND SUBTITLE | 5. REPORT DATE |
|---|---|
| Determination of Particulate Emission Factors for Boilers and Incinerators Bronx and Manhattan | February 1974 |
| | 6. PERFORMING ORGANIZATION CODE |
| 7. AUTHOR(S) | 8. PERFORMING ORGANIZATION REPORT NO. |
| E. W. Savoie and M. Kormanik | |
| 9. PERFORMING ORGANIZATION NAME AND ADDRESS | 10. PROGRAM ELEMENT NO. |
| Environmental Conservation Research, Inc.<br>50 Wolf Road<br>Albany, NY 12201 | 11. CONTRACT/GRANT NO.<br>68-02-1070 |
| 12. SPONSORING AGENCY NAME AND ADDRESS | 13. TYPE OF REPORT AND PERIOD COVERED |
| Environmental Protection Agency<br>Office of Air and Waste Management<br>Office of Air Quality Planning and Standards<br>Research Triangle Park, NC 27711 | Final<br>14. SPONSORING AGENCY CODE |

15. SUPPLEMENTARY NOTES

16. ABSTRACT

The purpose of this project was to determine particulate emission factors for residual oil-fired boilers and flue-fed incinerators in apartment houses in South Bronx and Upper Manhattan, New York City. Twenty-five boilers were tested ranging in age from new to fifty years old, with maximum burning rates ranging from 14 to 100 gallons of fuel per hous. Twenty-one incinerators were tested with charging rates from 84 to 383 pounds per hous. All installations were tested as found, that is, no adjustment or maintenance other than cleaning the incinerator was performed prior to conducting the tests.

Tests were conducted utilizing the particulate sampling train developed by EPA. The emission factors on a dry filter basis were determined to be:

a. 24.0 pounds of particulate per 1000 gallons of low sulfur residual fuel oil.
b1. 18.9 pounds of particulate per ton of refuse burned.
2. 7.9 pounds of particulate per ton of refuse charged.

The emission factors on a total (filter plus impinger) basis were found to be:

a. 33.5 pounds of particulate per 1000 gallons of low sulfur residual fuel oil.
b1. 32.9 pounds of particulate per ton of refuse burned.
2. 13.9 pounds of particulate per ton of refuse charge.

17. KEY WORDS AND DOCUMENT ANALYSIS

| a. DESCRIPTORS | b. IDENTIFIERS/OPEN ENDED TERMS | c. COSATI Field/Group |
|---|---|---|
| | PRICES SUBJECT TO CHANGE | |

| 18. DISTRIBUTION STATEMENT | 19. SECURITY CLASS (This Report) | 21. NO. OF PAGES |
|---|---|---|
| Release unlimited | UNCLASSIFIED | 118 |
| | 20. SECURITY CLASS (This page) | 22. PRICE |
| | UNCLASSIFIED | $5.50 |

EPA Form 2220-1 (9-73)

EPA-450/3-76-008

# DETERMINATION OF PARTICULATE EMISSION FACTORS FOR BOILERS AND INCINERATORS BRONX AND MANHATTAN

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Prepared for

U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Air and Waste Management
Office of Air Quality Planning and Standards
Research Triangle Park, NC 27711

February 1974

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Publication No. EPA-450/3-76-008

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The purpose of this project was to determine particulate emission factors for residual oil-fired boilers and flue-fed incinerators in apartment houses in South Bronx and Upper Manhattan, New York City. Twenty-five boilers were tested ranging in age from new to fifty years old, with maximum burning rates ranging from 14 to 100 gallons of fuel per hour. Twenty-one incinerators were tested with charging rates from 84 to 383 pounds per hour. All installations were tested as found, that is, no adjustment or maintenance other than cleaning the incinerator was performed prior to conducting the tests.

Tests were conducted utilizing the particulate sampling train developed by the U.S. Environmental Protection Agency.

The emission factors on a dry filter basis were determined to be:

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b. 1. 18.9 pounds of particulate per ton of refuse burned.

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Acknowledgements

The authors wish to acknowledge the assistance and cooperation of the New York City Department of Air Resources for their help in conducting pre-test inspections of equipment and installations.

Acknowledgement is also due to the New York State Department of Environmental Conservation whose personnel conducted the actual sampling of emissions.

The authors also wish to acknowledge the assistance and cooperation of the following agencies for their help in making it possible to conduct this project:

New York City Housing Authority
New York City Department of Sanitation
New York State Division of Laboratories and Research

The authors wish to acknowledge their gratitude to the owners of the apartment houses where the tests were conducted.

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# DETERMINATION OF PARTICULATE EMISSION FACTORS FOR BOILERS AND INCINERATORS IN MULTIPLE DWELLINGS BRONX AND MANHATTAN

## PURPOSE

The purpose of this project was to determine particulate emission factors for residual (#6) oil fired boilers and flue-fed incinerators in apartment houses in the South Bronx and Upper Manhattan areas of New York City. These areas were chosen because ambient air quality standards for particulates are being exceeded in these geographic areas of the City.

## PROCEDURE

1. Site Selection

Since it was not possible to stack test every installation within the prescribed geographic area, a procedure was needed to test a number of sites based principally on the degree of upgrading and the geographic location. A list of possible sites (dated 9/20/72) was supplied by the New York City Department of Air Resources and through joint meetings of Federal and City personnel the list was divided into categories A, B, C, D, or upgraded, as follows:

| Rating | Boiler Criteria | #in Manhattan | #in Bronx | Total |
|---|---|---|---|---|
| A | The presence of both a wind box and barometric damper (or sequential draft controller) | 17 | 25 | 42 |
| B | Only wind box persent | 7 | 12 | 19 |
| C | Only barometric damper | 31 | 44 | 75 |
| D | Neither wind box nor damper | 36 | 48 | 84 |
| | Total Surveyed | 91 | 129 | 220 |

Upgraded - Those boiler installations complying with design criteria mandated by the New York City Department of Air Resources.

Twenty-five boiler sites were tested.

| Rating | Boiler Criteria | #in Manhattan | #in Bronx | Total |
|---|---|---|---|---|
| A | Installation with at least a scrubber and burner | 7 | 6 | 13 |

| | | | | |
|---|---|---|---|---|
| B | At least a burner but no scrubber | 35 | 22 | 57 |
| C | Neither a scrubber nor burner | 21 | 79 | 100 |
| | Total Surveyed | 63 | 107 | 170 |

Upgraded - Those incinerator installations complying with design criteria mandated by the New York City Department of Air Resources.

Twenty-one incinerator sites were tested.

Using the lists as a starting point, the owners of approximately 70 incinerator sites were contacted by a letter requesting permission to test their boiler and incinerator and to install the necessary ports or equipment required for the tests. A pretest inspection was conducted at sites where permission was granted to gather information necessary to conduct the tests. Some sites were rejected for the following reasons:

a. Chimney falling apart or leaning at a dangerous angle.
b. Missing bricks or unusual configuration at top preventing use of a stack insert.
c. Stack height would require too much scaffolding, and exhaust velocities were too low to utilize ports in chimney.
d. Chimney too far from roof.
e. Roof considered unsafe for equipment.
f. Stacks common for other boilers, incinerators and/or hot water heaters.
g. Difficulty with removing spark arrestor.
h. Stack too small for insert and velocities too low for sampling.
i. Boilers burning No. 2 or No. 4 oil instead of residual fuel oil.
j. Impossible to install oil meters.
k. Installation inoperative during duration of project.
l. Site razed.
m. Fear of damage suits (only verbal approval granted).
n. Incorrect boiler or incinerator category.
o. Location in borough outside target area.

The sites tested have been assigned a code number in the following manner:

Site A1BHB -

A = Category A
1 = Site number one within the category
B = Located in Bronx (M designates Manhattan)
H = Public Housing Authority site (P designates private ownership)
B = Boiler Installation (I designates incinerator)

2. Actual Sampling

Particulate Sampling was accomplished isokinetically with the train developed by U.S. Environmental Protection Agency complete with the MSA 1106BH filter, optional cyclone, and impinger section. In most cases, a 12 inch x 12 inch stack insert with built-in ports was inserted into the chimney, thus eliminating the possibility that particulate adhering to the chimney wall would bias the results, and imparting a needed higher velocity to the exhaust gases so that tests could be conducted. Fiberglass insulation was used to secure a seal between the chimney and the insert plate.

At the initiation of the project, sampling points were selected in the center of four six inch by six inch areas in accordance with previously published recommendations.[1] At the request of U.S. Environmental Protection Agency, Region II, the sampling points were changed to the center of eight three inch by six inch areas.

At boiler tests, two test trains removed samples simultaneously, one from each of two ports. Since the spacing of the ports did not permit the boxes to be placed side by side, one box was equipped with a three foot glass probe, the other with a five foot glass probe. (See Appendix A). Halfway through the run (30 minutes) the probes were replaced with clean probes, the filter boxes reversed and the test completed. Occasionally, due to a blown fuse or a breakdown of one of the sampling trains, the finishing times of the two trains were different.

At incinerator tests, samples were extracted consecutively, each test run usually lasting for one hour.

The probe wash, filters and impinger catch were sent to the New York State Division of Laboratories and Research in Syracuse for analysis.

Boiler Operation at the initiation of the project was planned to take place by cycling the burner to operate 25% of each hour, with sampling trains turned on and off to match burner operation. It was assumed this cyclic operation would represent a compromise between cold weather and warm weather boiler operation. It soon became obvious the sites had modulating type burners which ran continuously during the morning hours even though the weather was mild. Therefore, tests were taken during continuous operation.

The scope of the study included the determination of soot blowing emissions. Our inspections located several installations with soot blowing equipment, all at Public Housing Authority Sites which had large stacks.

---

1. "Specifications for Incinerator Testing at Federal Facilities," U.S. Department of Health, Education, and Welfare, National Center for Air Pollution Control, Durham, North Carolina, October 1967.

It was necessary to sample from ports in the chimney since our small stack insert was not suitable for use in such large stacks. The low stack velocities necessitated the use of a micromanometer for velocity measurement. The usual soot blow operation consisted of blowing compressed air for two second intervals, followed by a 5-10 minute pause while pressure was restored to the equipment. This cyclic operation took place three times daily, usually lasted 20-30 minutes but sometimes extended to one hour, and normally would be activated in the early morning hours. The superintendent was instructed to postpone the early operation on the day of testing and activate the mechanism for our tests. Changes in stack velocity during the soot blowing period were not detectable.

Incinerator Operation was determined by simulating the normal operation as determined by inspection and information supplied by the building superintendent. The superintendent was sometimes able to indicate the volume of refuse normally present at ignition. More often the quantity to be charged was determined after measurement of the combustion chamber volume as follows:

$$\text{Refuse Charged} = \frac{\text{Combustion Chamber Volume}}{2} \times \frac{4.1 \text{ pounds}}{\text{cu. ft.}}$$

The incinerator was first cleaned and then charged with weighed refuse. All charging hoppers were taped closed, The refuse was ignited by the burner or by a match when necessary, and sampling started as soon as measurable velocities were detected. After one hour or a minimum of 30 $ft^3$ of sampled gas, the fire was extinguished. Prior to the first test run, a garden hose was "calibrated" by noting the quantity of water (spray) delivered per unit time from a spigot available at the site. Later, the water spray was used to extinguish the fire with care taken to avoid spraying the hot refractory, and the time duration of spraying was noted to determine the quantity of water added to the refuse. Half of this added water was assumed absorbed into the refuse, and the other half was assumed to either evaporate or drain away. The refuse was removed and weighed and half of the sprayed water subtracted to determine the amount of refuse remaining after the test. The cleaned incinerator was again charged as before and the same procedure followed for the second test run.

During our later tests, the ashes were extinguished by shoveling them into garbage cans and covering tightly to smother the fire. While the second procedure eliminated the possible error introduced by the addition of water, it introduced a smaller new error by allowing some burning to continue during the cleaning operation.

Bacharach readings were taken at each boiler site where a small hole could be placed in the breeching immediately after the boiler. At multiple boiler installations the readings were taken in the common breeching directly after the point of juncture. At some sites the breeching was not accessible. The measurements were taken every five minutes during burner operation. The instructions accompanying the instruments were followed.

Smoke (opacity) readings were taken at each boiler and incinerator site by qualified observers.

Oil Meters were installed by licensed servicemen at each boiler site in the locations determined by New York City Department of Air Resources inspectors or the servicemen. The meters selected (recommended by New York City Department of Air Resources) were Neptune 5/8" type S meters with horizontal totalizer register model 15$_7$ complete with gasket type couplings and tail piece and $\frac{1}{2}$" strainer. This meter has a recommended range for bunker oil of 2 to 10 GPM, 150 PSI maximum working pressure, 250°F maximum temperature. The face of the register consists of six numeral wheels to indicate tens of gallons, and a circular needle indicator marked to ten-one gallon divisions. (See performance curve, Appendix A).

Installed meters were read immediately, everytime the burner turned on or off. Estimates were made to the nearest $\frac{1}{4}$ gallon.

Most boiler sites required the installation of two meters, one in the oil supply line and one in the oil return line. A few sites required a third meter where piping permitted recirculation of heated oil.

All meters were calibrated before delivery. At the conclusion of testing the meters were recalibrated. Since calibration is normally performed on thoroughly cleaned meters, we requested the calibration procedure be performed on some of the meters as they were received from the sites and again after a thorough cleaning. (See Appendix A).

Oil Temperature measurements were taken at most installations either by utilizing available temperature gages or measuring the temperature of extracted samples.

Orsat Analysis was performed on samples typically taken on the roof at each boiler and incinerator site. Generally, two integrated samples (each for 30 minutes) were taken at each site consistent with EPA method 3, 40 CFR 60.85, analyzed, and the results averaged.

Equipment Check Lists were completed by personnel associated with the project by inspections at each site during the execution of the project. It was not possible in every instance to conclusively verify data relating to age, capacity, normal operating temperature and pressure, operating condition of equipment, etc.

Oil Samples were taken at the completion of sampling from existing taps or by breaking the bypass piping. Two samples were taken at each boiler site, one for delivery to New York City Department of Air Resources and one for shipping to U.S. EPA in Durham, N.C. The analysis for carbon content performed by EPA, Quality Assurance and Environmental Monitoring Laboratory in North Carolina, was utilized in computation of a carbon balance as part of this project.

Boiler room temperatures and breeching temperatures were also measured.

3. Calculations

The equations developed by EPA and published in the Federal Register of December 23, 1971, (Vol. 36, No. 247) as referenced below were used for all calculations relating to emissions expressed in terms of grain loading. Additional equations necessary for calculation of emissions in terms of weight loading are presented.

a. Stack Velocity and Flow Rates EPA equations 2-1 thru 2-3

$$Q's = 3600\ (Vs\ Avg.)\ A\ (Tstd/Ts\ Avg.)\ (Ps/Pstd)$$

Where Q's = total volumetric flow rate of stack gases, including moisture, scf/hr

b. Orsat Analysis EPA equation 3-2

c. Moisture Determination EPA equations 4-1 thru 4-3

d. Particulate Emissions EPA equations 5-1 thru 5-6

$$Ws = \frac{(1.0\ lb/454{,}000\ mg.)}{V\ total}\ Mn \qquad Q's$$

Where Ws = weight rate of particulate emissions, lb/hr
Mn = total dry filter catch, or
Mn = total (wet and dry) catch, including condensables, used alternately to determine emissions in terms of total catch.

e. Carbon Balance

lbs C per hour in fuel =

$$\frac{gal}{hr} \times S.G.\ Fuel\ (60^{o}) \times 8.33\ \frac{lbs}{gal}\ (water\ 60^{o}F) \times \frac{lb\ C}{lb\ fuel}$$

$$lbs\ C\ emitted\ per\ hour = Q's\ \frac{(\%\ CO_2 + \%\ CO)}{100}\ \frac{492^{o}R}{530^{o}R} \times \frac{12}{359}$$

f. Refuse charged per hour = Amount charged ÷ duration of burn (Duration of burn is taken as elapsed time from start to finish of test)

g. Refuse burned per hour =

$$\frac{Amount\ charged - (ash\ weight - \frac{1}{2}\ weight\ of\ added\ water)}{duration\ of\ burn}$$

h. Emission factor

$$\frac{\text{lbs particulate}}{\text{1000 gal fuel}} = \frac{Ws \times 10^3}{\text{gal of fuel per min} \times 60}$$

i. Emission factor

$$\frac{\text{lbs particulate}}{10^6 \text{ BTU}} =$$

$$\frac{Ws}{\text{Gallon of fuel per min} \times 60} \times \frac{10^6}{\text{S.G.(fuel, } 60^o) \times 8.33 \text{ lbs} \times \text{BTU(fuel)}}$$

## BOILER EQUIPMENT

| Site | Manufacturer | Model No. | Material | Tube Type | Approx. Age of Boiler - Years |
|---|---|---|---|---|---|
| A1BHB | Fitzgibbons | MD13990 | Steel | Fire Tube | N.A. |
| A2BPB | Pacific | 67L2 | Steel | Fire Tube | 16 |
| A3BHB | Fitzgibbons | A1781 | Steel | Fire Tube | 11 |
| A4MPB | Fitzgibbons | RM242 | Steel | Fire Tube | 30 |
| A5MPB | Pacific | N.A. | Steel | Fire Tube | 25 |
| A6BPB | Fitzgibbons | RM182 | Steel | Fire Tube | 30 |
| A7MPB | Crotty | 6438 | Steel | Fire Tube | 15 |
| A8MPB | National | MD16571 | Steel | Fire Tube | 30 |
| A9MPB | National | MD13425 | Steel | Fire Tube | 30 |
| A10BHB | Fitzgibbons | MD44371 | Steel | Fire Tube | 12 |
| B1MPB | Oil City | N.A. | Steel | Fire Tube | 30 |
| B2BPB | Kewanee | RM242 | Steel | Fire Tube | 25 |
| B3BPB | Oil City | MFG6615M | Steel | Fire Tube | 24 |
| B4MPB | Pacific | 215LA | Steel | Fire Tube | 15 |
| B5BPB | Pacific | 22595 | Steel | Fire Tube | 30 |
| C1BHB | Fitzgibbons | MD44326 | Steel | Fire Tube | 18 |
| D1MPB | Federal | FST90 | Steel | Fire Tube | 15 |
| D2MPB | Rockmill | MD14246 | Steel | Fire Tube | New |
| D3MPB | Cokefair | N.A. | Steel | Fire Tube | 50 |
| D4BPB | Pacific | N.A. | Steel | Fire Tube | 37 |
| U1BPB | Fitzgibbons | RM182 | Steel | Fire Tube | 30 |
| U2MPB | Oil City | MD10616 | Steel | Fire Tube | 30 |
| U3MPB | Federal | FM18220 | Steel | Fire Tube | 12 |
| U4MPB | Pacific | 9151 | Steel | Fire Tube | 15 |
| U5BPB | Fitzgibbons | RM182 | Steel | Water Tube | N.A. |

N.A. - Not Available

## BURNER EQUIPMENT

| Site | Manufacturer | Model No. | Type* | Firing Control |
|---|---|---|---|---|
| A1BHB | Todd | N.A. | 1 | Modulating |
| A2BPB | Superior | ABAA6-250 | 1 | Modulating |
| A3BHB | Todd | 187935 | 1 | Modulating |
| A4MPB | Petro | W-6 | 1 | Modulating |
| A5MPB | Petro | DP8559 | 1 | Modulating |
| A6BPB | Enterprise | 62900 | 1 | Modulating |
| A7MPB | York | 055-175 | 1 | Modulating |
| A8MPB | Uniflow | N.A. | 1 | Modulating |
| A9MPB | Uniflow | 1013 | 1 | Modulating |
| A10BHB | Todd | 4-ML | 1 | Modulating |
| B1MPB | Petro | N.A. | 1 | Modulating |
| B2BPB | Enterprise | 3450-G | 1 | Modulating |
| B3BPB | Ray | 60N | 1 | Modulating |
| B4MPB | Ray | 550 | 1 | Modulating |
| B5BPB | Petro | N.A. | 1 | On-Off |
| C1BHB | Todd | F268557 | 1 | Modulating |
| D1MPB | Hev-E-Oil | AM6E | 1 | Modulating |
| D2MPB | Petro | DP7109 | 1 | Modulating |
| D3MPB | Petro | 6AH | 1 | On-Off |
| D4BPB | Petro | N.A. | 1 | On-Off |
| U1BPB | Enterprise | 62900 | 1 | Modulating |
| U2MPB | Hev-E-Oil | AM6-E | 1 | Modulating |
| U3MPB | Petro | WD6AH | 1 | Modulating |
| U4MPB | Petro | WD5AH | 1 | Modulating |
| U5BPB | Petro | W5AH | 1 | Modulating |

*Type Burner
1 - Horizontal Rotary Cup
2 - Air Atomizer
3 - Steam Atomizer

N.A. - Not Available

## BOILER AUXILIARY EQUIPMENT

| Site | Primary Oil Heater | Secondary Oil Heater | Combustion Controller | Sequential Draft Contr. | Barometric Damper | Windbox |
|---|---|---|---|---|---|---|
| A1BHB | Yes | Yes | Yes | Yes | No | Yes |
| A2BPB | Yes | Yes | Yes | Yes | No | Yes |
| A3BHB | Yes | Yes | Yes | Yes | Yes | Yes |
| A4MPB | Yes | Yes | Yes | Yes | No | Yes |
| A5MPB | Yes | Yes | Yes | No | Yes | Yes |
| A6BPB | Yes | Yes | Yes | Yes | No | Yes |
| A7MPB | Yes | Yes | Yes | No | Yes | Yes |
| A8MPB | Yes | Yes | Yes | No | Yes | Yes |
| A9MPB | Yes | Yes | Yes | No | Yes | Yes |
| A10BHB | Yes | Yes | Yes | Yes | No | Yes |
| B1MPB | Yes | Yes | No | No | No | Yes |
| B2BPB | Yes | Yes | Yes | No | No | Yes |
| B3BPB | Yes | Yes | Yes | No | No | Yes |
| B4MPB | Yes | Yes | Yes | No | No | Yes |
| B5BPB | Yes | Yes | No | No | No | Yes |
| C1BHB | Yes | Yes | Yes | Yes | Yes | No |
| D1MPB | Yes | Yes | Yes | No | No | No |
| D2MPB | Yes | Yes | Yes | No | No | No |
| D3MPB | Yes | Yes | Yes | No | No | No |
| D4BPB | Yes | Yes | No | No | No | No |
| U1BPB | Yes | Yes | Yes | Yes | No | Yes |
| U2MPB | Yes | Yes | No | No | Yes | Yes |
| U3MPB | Yes | Yes | Yes | N.A. | Yes | Yes |
| U4MPB | Yes | Yes | Yes | Yes | Yes | Yes |
| U5BPB | Yes | Yes | Yes | Yes | No | Yes |

N.A. - Not Available

## INCINERATOR EQUIPMENT

| Site Code | Manufacturer | Model # | Flue Design S or D | Combustion Chamber S or M | Chamber Volume $ft^3$ | Grate Area $ft^2$ |
|---|---|---|---|---|---|---|
| A1MHI | Morse Bougler | N.A. | S | N.A. | 210 | N.A. |
| A2BHI | Oswald Co. | SFD2R | S | S | 150 | 25 |
| B1BHI | Kernerator | N.A. | S | S | 60.75 | 3 |
| B2BHI | Kernerator | N.A. | S | S | 120 | 8 |
| B3BHI | Unknown | N.A. | S | S | 180 | 18 |
| B4MPI | Equal-Air | N.A. | S | M | 64 | 16 |
| B5BHI | Unknown | N.A. | S | S | 96 | 16 |
| C1MPI | Kernerator | N.A. | S | S | N.A. | 12 |
| C2MPI | Kernerator | N.A. | S | S | 105 | 5 |
| C3MPI | Ventomatic | N.A. | S | S | 96 | no grate |
| C4BPI | Kernerator | N.A. | S | S | N.A. | no grate |
| C5MPI | George E. Sealy | N.A. | S | S | 48 | 12 |
| C6BPI | PGM | N.A. | S | S | 110 | 13.5 |
| C7BPI | Interboro | 1828B | S | S | 56 | 16 |
| C8BPI | Kernerator | N.A. | N.A. | S | N.A. | 6 |
| C9MPI | Ventomatic | N.A. | S | S | N.A. | N.A. |
| C10MPI | Kerner | N.A. | S | S | 44 | 11 |
| U1BPI | Kernerator | N.A. | S | S | 360 | 40 |
| U2MPI | Kerner | N.A. | S | S | 44 | 11 |
| U3MPI | Equal-Air | N.A. | S | M | 64 | 16 |
| U4BHI | Sargent | N.A. | S | M | 177 | 24 |

N.A. - Not Available
S - Single
D - Double
M - Multiple

## INCINERATOR AUXILIARY EQUIPMENT

| Site Code | Primary Burner Y or N | Auxiliary Burner Y or N | Gas Usage CFM | Gas Scrubber Y or N | Over Fire Air Fan & Nozzle System | Cycling Clock | Charging Gate |
|---|---|---|---|---|---|---|---|
| A1MHI | Yes | No | N.A. | Yes | Yes | Yes | Yes |
| A2BHI | Yes | No | 1.7-12.5 | Yes | Yes | Yes | Yes |
| B1BHI | Yes | No | 5 | No | Yes | Yes | No |
| B2BHI | Yes | No | N.A. | No | Yes | Yes | No |
| B3BHI | Yes | No | N.A. | No | Yes | Yes | Yes |
| B4MPI | Yes | Yes | 50 | No | Yes | Yes | Yes* |
| B5BHI | Yes | No | N.A. | No | Yes | Yes | No |
| C1MPI | No | No | No | No | No | No | Yes |
| C2MPI | No | No | No | No | No | No | No |
| C3MPI | No | No | No | No | No | No | No |
| C4BPI | No | No | No | No | No | No | Yes |
| C5MPI | No | No | No | No | No | No | No |
| C6BPI | No | No | No | No | No | No | No |
| C7BPI | No | No | No | No | No | No | No |
| C8BPI | No | No | No | No | No | No | No |
| C9MPI | No | No | No | No | No | No | No |
| C10MPI | No | No | No | No | No | No | No |
| U1BPI | Yes | Yes | N.A. | Yes | Yes | Yes | Yes |
| U2MPI | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| U3MPI | Yes | Yes | 50 | Yes | Yes | Yes | Yes |
| U4BHI | Yes | No | N.A. | Yes | Yes | Yes | Yes |

*Same as U3MPI except scrubber bypassed

N.A. - Not Available

## TEST DATE INFORMATION

| Site Code | Date Tested | Ambient T °F @ 10 A.M. | Stack Insert Used |
|---|---|---|---|
| A1BHB | 6-5-73 | 80 | No |
| A2BMB | 5-4-73 | 60 | Yes |
| A3BHB | 6-23-73 | 73 | No |
| A4MPB | 4-14-73 | 45 | No |
| A5MPB | 3-21-73 | 37 | Yes |
| A6BPB | 5-7-73 | 60 | Yes |
| A7MPB | 4-13-73 | 40 | Yes |
| A8MPB | 4-30-73 | 59 | Yes |
| A9MPB | 5-1-73 | 64 | Yes |
| A10BHB | 6-26-73 | 71 | No |
| B1MPB | 4-11-73 | 36 | No |
| B2BPB | 4-10-73 | 50 | Yes |
| B3BPB | 4-6-73 | 51 | Yes |
| B4MPB | 4-3-73 | 52 | Yes |
| B5BPB | 5-12-73 | 64 | No |
| C1BMB | 6-27-73 | 69 | No |
| D1MPB | 3-27-73 | 46 | Yes |
| D2MPB | 3-23-73 | 41 | Yes |
| D3MPB | 4-4-73 | 46 | Yes |
| D4BPB | 5-5-73 | 47 | Yes |
| U1BPB | 5-22-73 | 67 | Yes |
| U2MPB | 4-20-73 | 57 | Yes |
| U3MPB | 4-18-73 | 68 | No |
| U4MPB | 5-11-73 | 61 | Yes |
| U5BPB | 5-22-73 | 67 | Yes |

TABLE 1

BOILER DATA

| Site Code | Boiler Room Avg. T°F | Breeching Avg. T°F | Oil Supply Line Avg. T°F | Average % $CO_2$ | Orsat % $O_2$ | Results % CO | Bacharach Avg. No. | Range of Ringlemann No. |
|---|---|---|---|---|---|---|---|---|
| A1BHB | 82 | 204 | 110 | 1.9 | 18.1 | 0.0 | 1.6 | 0 |
| A2BPB | 92 | 393 | 145 | 5.2 | 11.8 | 0.1 | 2.0 | N.A. |
| A3BHB | 88 | 273 | 150 | 0.6 | 20.0 | 0.1 | N.A. | 0* |
| A4MPB | 72 | 379 | 108 | 3.0 | 14.5 | 0.4 | 3.4 | 0 |
| A5MPB | 75 | 369 | 119 | 5.3 | 13.3 | 0.3 | 3.8 | N.A. |
| A6BPB | 103 | 399 | 130 | 4.8 | 12.8 | 0.0 | 6.0 | 0 |
| A7MPB | 79 | 454 | N.A. | 6.0 | 12.9 | 0.1 | 0.3 | 0-3 |
| A8MPB | 90 | 422 | 134 | 5.8 | 12.5 | 0.0 | 1.0 | 0 |
| A9MPB | 81 | 342 | 102 | 4.5 | 14.5 | 0.1 | 1.0 | 0 |
| A10BHB | 80 | 303 | 157 | 1.7 | 18.9 | 0.0 | 0 | .1-.5* |
| B1MPB | 73 | 328 | 100 | 3.7 | 19.0 | 0.2 | 2.5 | N.A. |
| B2BPB | 89 | 342 | 120 | 3.4 | 14.1 | 0.0 | 6.0 | N.A. |
| B3BPB | 84 | 372 | 104 | 5.0 | 13.2 | 0.0 | 4.5 | N.A. |
| B4MPB | 106 | 478 | 106 | 5.6 | 13.1 | 0.2 | 1.5 | 1-2 |
| B5BPB | 98 | 454 | N.A. | 7.0 | 10.8 | 0.0 | 5.4 | 0-1 |
| C1BHB | 85 | 292 | 146 | 1.6 | 19.1 | 0.1 | 0 | N.A. |
| D1MPB | 103 | 530 | 146 | 7.0 | 10.7 | 0.5 | 1.0 | N.A. |
| D2MPB | 78 | N.A. | 105 | 5.8 | 13.7 | 0.5 | N.A. | 2.5-4.0 |
| D3MPB | 88 | 403 | 138 | 5.6 | 13.1 | 0.2 | 1.0 | 0 |
| D4BPB | 87 | 375 | N.A. | 4.8 | 13.5 | 1.0 | 8.9 | 1.0 |
| U1BPB | 82 | 394 | N.A. | 1.5 | 18.9 | 0.2 | 7.5 | 0-.5 |
| U2MPB | 80 | 282 | N.A. | 5.5 | 11.3 | 0.5 | 0.4 | N.A. |
| U3MPB | 86 | 249 | N.A. | 3.5 | 16.0 | 1.0 | 0.4 | 0 |
| U4MPB | 93 | 402 | 153 | 5.4 | 13.4 | 0.5 | 6.7 | 0-3 |
| U5BPB | 86 | 393 | N.A. | 4.4 | 13.4 | 0.0 | 10. | N.A. |

N.A. - Not Available

*Smoke Density Meter Reading

TABLE 2

CARBON BALANCE

| Code No. | Fuel Carbon Avg. input lbs/hr. | Orsat Carbon Avg. output lbs/hr. |
|---|---|---|
| A1BHB | 370 | 299 |
| A2BPB | 206 | 162 |
| A3BHB | 510 | 211 |
| A4MPB | 209 | 323 |
| A5MPB | 68 | 116 |
| A6BPB | 180 | 151 |
| A7MPB | 195 | 184 |
| A8MPB | 364 | 157 |
| A9MPB | 319 | 115 |
| A10BHB | 551 | 183 |
| B1MPB | 164 | 122 |
| B2BPB | 109 | 97 |
| B3BHB | 121 | 111 |
| B4MPB | 184 | 160 |
| B5BPB | 260 | 147 |
| C1BPB | 630 | 645 |
| D1MPB | 132 | 136 |
| D2MPB | 212 | 181 |
| D3MPB | 260 | 157 |
| D4BPB | 270 | 164 |
| U1BPB | 190 | 39 |
| U2MPB | 195 | 147 |
| U3MPB | 130 | 226 |
| U4MHB | 174 | 172 |
| U5BPB | 215 | 114 |

TABLE 3

INDIVIDUAL BOILER EMISSION FACTORS

| Site Code | Fuel gal/hr | EMISSION FACTORS Dry Catch Gr/SCF @ 12% $CO_2$ | Dry Catch lb/hr | Total lb/hr | Dry Catch lb/$10^6$ BTU | Dry Catch lb/1000 gal | Total lbs/1000 gal |
|---|---|---|---|---|---|---|---|
| | 67.8 | .100 | 1.10 | 2.09 | 0.112 | 16.3 | 30.8 |
| A1BHB | 94.6 | .088 | 1.03 | 2.18 | 0.075 | 10.9 | 23.0 |
| | *89.2 | .069 | 1.02 | 2.84 | 0.079 | 11.4 | 31.9 |
| A2BPB | 32.1 | .136 | .83 | 1.19 | 0.179 | 25.7 | 37.2 |
| | 32.1 | .150 | .91 | 1.14 | 0.196 | 28.3 | 35.6 |
| | 79.5 | .086 | .65 | 1.88 | 0.056 | 8.2 | 23.7 |
| A3BHB | 79.5 | .067 | .57 | 2.08 | 0.050 | 7.2 | 26.2 |
| | *63.3 | .404 | 2.26 | 4.84 | 0.247 | 35.6 | 76.4 |
| A4MPB | 31.4 | .133 | 1.48 | 2.10 | 0.324 | 47.0 | 66.9 |
| | 33.0 | .114 | 1.22 | 2.13 | 0.255 | 37.1 | 64.7 |
| | 10.6 | .122 | .52 | .62 | 0.339 | 49.3 | 58.3 |
| A5MPB | 10.6 | .062 | .25 | .37 | 0.163 | 23.8 | 34.6 |
| | 10.6 | .049 | .20 | .29 | 0.130 | 18.8 | 27.4 |
| +A6BPB | 28 | .058 | .33 | .60 | 0.081 | 11.7 | 21.3 |
| | 28 | .074 | .40 | .83 | 0.099 | 14.4 | 29.6 |
| A7MPB | 30.5 | .042 | .27 | .54 | 0.061 | 8.8 | 17.7 |
| | 30.5 | .042 | .30 | .62 | 0.068 | 10.0 | 20.2 |
| A8MPB | 56.2 | .169 | 1.01 | 1.22 | 0.124 | 17.9 | 21.7 |
| | 56.2 | .053 | .32 | .65 | 0.039 | 5.6 | 11.7 |
| A9MPB | 49.5 | .024 | .11 | .24 | 0.015 | 2.1 | 4.8 |
| | 49.5 | .087 | .33 | .50 | 0.046 | 6.8 | 10.2 |
| | 75.6 | .312 | 2.19 | 2.56 | 0.200 | 29.0 | 33.9 |
| A10BHB | 75.6 | .056 | .38 | .83 | 0.035 | 5.1 | 11.0 |
| | *70.4 | .050 | .64 | 1.3 | 0.063 | 9.1 | 18.5 |

* Soot Blow Test

** Probable Firing Rate

+ U1BPB same site as A6BPB. U1BPB tests conducted after serviceman adjustments to installation.

TABLE 3 (Continued)

| Site Code | Fuel gal/hr | EMISSION FACTORS Dry Catch G./SCF @ 12% $CO_2$ | Dry Catch lb/hr | Total lb/hr | Dry Catch lb/$10^6$ BTU | Dry Catch lb/1000 gal | Total lbs/1000 gal |
|---|---|---|---|---|---|---|---|
| B1MPB | 25.5 | .102 | .43 | .61 | 0.116 | 17.0 | 24.0 |
| | 25.5 | .090 | .41 | .66 | 0.111 | 16.1 | 25.9 |
| B2BPB | 16.9 | .063 | .26 | .53 | 0.106 | 15.1 | 31.5 |
| | 16.9 | .129 | .46 | .76 | 0.188 | 27.3 | 45.2 |
| B3BPB | 18.8 | .057 | .22 | .42 | 0.081 | 11.6 | 22.2 |
| | 18.8 | .049 | .22 | .36 | 0.081 | 11.8 | 18.9 |
| B4MPB | 28.6 | .034 | .20 | .31 | 0.048 | 7.0 | 10.7 |
| | 28.6 | .050 | .28 | .37 | 0.068 | 9.7 | 12.9 |
| B5BPB | 39.3 | .058 | .31 | .49 | 0.054 | 8.0 | 12.6 |
| | 39.3 | .176 | 1.03 | 1.42 | 0.181 | 26.1 | 36.1 |
| C1BHB | 98.0 | .036 | .73 | 1.89 | 0.051 | 7.4 | 19.3 |
| | 98.0 | .015 | .27 | 1.95 | 0.019 | 2.7 | 19.8 |
| | *99.5 | .032 | .74 | 2.17 | 0.051 | 7.4 | 21.8 |
| | *99.5 | .037 | .93 | 2.25 | 0.065 | 9.4 | 22.6 |
| D1MPB | **16.0 | .028 | .14 | .23 | 0.060 | 8.5 | 14.5 |
| | **16.0 | .026 | .12 | .26 | 0.052 | 7.6 | 16.0 |
| D2MPB | 32.9 | .855 | 5.61 | 5.83 | 1.178 | 169.9 | 176.3 |
| | 32.9 | .888 | 3.76 | 3.90 | 0.789 | 114.4 | 118.5 |
| D3MPB | 40.6 | .037 | .21 | .76 | 0.036 | 5.3 | 18.7 |
| | 41.0 | .073 | .41 | .72 | 0.069 | 10.1 | 17.5 |
| D4BPB | 42.0 | .328 | 1.74 | 2.02 | 0.286 | 41.4 | 48.0 |
| | 42.0 | .211 | 1.13 | 1.68 | 0.186 | 26.9 | 39.9 |
| U1BPB | 29.4 | .885 | 1.46 | 1.81 | 0.343 | 49.8 | 61.7 |
| | 29.4 | .346 | .55 | .73 | 0.129 | 18.6 | 24.7 |
| U2MPB | 30.4 | .049 | .25 | .33 | 0.057 | 8.1 | 10.9 |
| | 30.4 | .017 | .09 | .20 | 0.020 | 2.8 | 6.5 |
| U3MPB | **20.2 | .009 | .24 | .48 | 0.082 | 11.9 | 23.8 |
| | **20.2 | .013 | .26 | .41 | 0.0889 | 12.9 | 20.2 |
| U4MPB | 26.4 | .076 | .45 | .68 | 0.118 | 17.2 | 25.6 |
| | 26.4 | .082 | .49 | .68 | 0.128 | 18.4 | 25.8 |
| U5BPB | 33.3 | .494 | 2.37 | 2.55 | 0.492 | 71.2 | 76.7 |
| | 33.3 | .596 | 2.85 | 3.05 | 0.591 | 85.4 | 91.5 |

* Soot Blow Test
** Probable Firing Rate

TABLE 4

AVERAGE BOILER EMISSION FACTORS

DRY (FILTER) CATCH ONLY (EXCLUDING SOOT BLOW)

| Boiler Category | Manhattan | | | | Bronx | | | |
|---|---|---|---|---|---|---|---|---|
| | Gr/SCF @ 12% $CO_2$ | lb/hr | lb/$10^6$ BTU | lb/$10^3$ gal | Gr/SCF @ 12% $CO_2$ | lb/hr | lb/$10^6$ BTU | lb/$10^3$ gal |
| A | .815 | .546 | .142 | 20.7 | .113 | .839 | .108 | 15.7 |
| B | .069 | .330 | .086 | 12.5 | .089 | .417 | .115 | 16.7 |
| C | - | - | - | - | .026 | .50 | .035 | 5.1 |
| D | .323 | 1.71 | .364 | 52.6 | .270 | 1.435 | .236 | 34.2 |
| U | .041 | .297 | .082 | 11.9 | .580 | 1.808 | .389 | 56.3 |

Average of All Sources (Excluding Soot Blow)

.155 gr/SCF @ 12% $CO_2$
.813 lb/hr
.167 lb/$10^6$ BTU
24.0 lb/$10^3$ gal

TOTAL (FILTER + IMPINGER) CATCH (EXCLUDING SOOT BLOW)

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| A | - | .844 | - | 30.7 | - | 1.538 | - | 27.2 |
| B | - | .488 | - | 18.4 | - | .663 | - | 27.8 |
| C | - | - | - | - | - | 1.92 | - | 19.6 |
| D | - | 1.95 | - | 60.3 | - | 1.85 | - | 44.0 |
| U | - | .463 | - | 18.8 | - | 2.04 | - | 63.7 |

Average of All Sources (Excluding Soot Blow)

1.19 lb/hr
33.5 lb/$10^3$ gal

TABLE 5

INCINERATOR TEST DATA

Run No. 1

| Site | Refuse Charged (lb) | Refuse Burned (lb) | Refuse Charging Rate (lb/hr) | Refuse Burning Rate (lb/hr) | Amount of Water to Extinguish Fire (lb) |
|---|---|---|---|---|---|
| A1MHI | 279.0 | 22.1 | 262 | 21 | none |
| A2BHI | 281.5 | 122.5 | 302 | 131 | none |
| B1BHI | 124.9 | 64.6 | 134 | 69 | none |
| B2BHI | 154 | 52.1 | 132 | 45 | none |
| B3MHI | 148.8 | 81 | 140 | 76 | none |
| B4MPI | 195.1 | 117.1 | 195 | 117 | 10.3 |
| B5BHI | 201 | 35.5 | 188 | 33 | none |
| C1MPI | 83.8 | 37.2 | 95 | 42 | 8.7 |
| C2MPI | 129.0 | 54.0 | 103 | 43 | none |
| C3MPI | 154 | 33 | 154 | 33 | 2.0 |
| C4MPI | 127.5 | 24.0 | 120 | 23 | none |
| C5MPI | 106.0 | 22.9 | 135 | 29 | 20.6 |
| C6BPI | 113.5 | 83.0 | 106 | 78 | none |
| C7BPI | 160.0 | 86.0 | 175 | 94 | none |
| C8BPI | 107.6 | 74 | 91 | 63 | none |
| C9MPI | 108 | 45.4 | 110 | 46 | none |
| C10MPI | 105.0 | 39.8 | 158 | 60 | 25.9 |
| U1BPI | 290.5 | 71.5 | 291 | 72 | 61.0 |
| U2MPI | 110.5 | 64.5 | 105 | 61 | none |
| U3MPI | 196.8 | 131.6 | 156 | 70 | 45 |
| U4BHI | 383.3 | 142.1 | 343 | 127 | none |
| | | Run No. 2 | | | |
| A1MHI | 277.0 | 56.5 | 260 | 53 | none |
| A2BHI | 279.0 | 150.0 | 299 | 161 | none |
| B1BHI | 127.1 | 57.3 | 136 | 61 | none |
| B2BHI | 142.8 | 68.9 | 138 | 67 | none |
| B3MHI | 150 | 90 | 132 | 79 | none |
| B4MPI | 204.8 | 113.9 | 205 | 114 | none |
| B5BHI | 219.5 | 115 | 205 | 108 | 1.3 |
| C1MPI | 83.8 | 42.1 | 105 | 53 | 9.8 |
| C2MPI | 123.5 | 50.5 | 99 | 40 | none |
| C3MPI | 135.5 | 76 | 125 | 70 | 2.0 |
| C4MPI | 116.0 | 43.5 | 102 | 38 | none |
| C5MPI | 105.0 | 35.2 | 131 | 44 | 9.9 |
| C6BPI | 117.5 | 88.0 | 110 | 83 | none |
| C7BPI | 158.0 | 87.5 | 155 | 86 | none |
| C8BPI | 112.8 | 37.9 | 121 | 41 | none |
| C9MPI | 112.5 | 61.8 | 116 | 64 | none |
| C10MPI | 106.0 | 43.2 | 159 | 65 | 25.9 |
| U1BPI | 269.5 | 88.0 | 284 | 93 | 20.0 |
| U2MPI | 150.7 | 67.7 | 117 | 53 | none |
| U3MPI | 188.1 | 77.8 | 128 | 53 | 10.3 |
| U4BHI | 373.5 | 163.55 | 334 | 146 | none |
| | | Run No. 3 | | | |
| A1MHI | 269.8 | 137.3 | 253 | 129 | 9.8 |
| B2BHI | 141.9 | 66.3 | 147 | 69 | none |
| B3MHI | 147 | 62.8 | 110 | 51 | 8.3 |
| B5BHI | 199.5 | 114 | 187 | 107 | none |
| C1MPI | 83.8 | 39.2 | 91 | 43 | 14.1 |
| C2MPI | 128.0 | 73.5 | 107 | 61 | none |
| C3MPI | 151.5 | 81.5 | 157 | 84 | 2.0 |
| C4MPI | 118 | 76 | 89 | 57 | none |
| C5MPI | 108.8 | 40.8 | 133 | 50 | 9.9 |
| C6BPI | 115.0 | 70.0 | 108 | 66 | none |
| C7BPI | 157.5 | 65.5 | 152 | 63 | none |
| C8BPI | 107.2 | 38.8 | 111 | 40 | none |
| C9MPI | 107.5 | 71 | 111 | 73 | none |
| C10MPI | 105.1 | 53.6 | 158 | 80 | 25.9 |
| U1BPI | 258.5 | 100.5 | 263 | 102 | 22.0 |

TABLE 6

INDIVIDUAL INCINERATOR EMISSION FACTORS

EMISSION FACTORS

| SITE CODE | DRY Gr/SCF @12%$CO_2$ | CATCH Lb/Hr | TOTAL Lb/Hr | DRY Lb/Ton Charge | TOTAL Lb/Ton Charge | DRY Lb/Ton Burn | TOTAL Lb/Ton Burn |
|---|---|---|---|---|---|---|---|
| A1MHI | 1.224 | 0.48 | 0.75 | 3.7 | 5.7 | 45.6 | 71.0 |
| | 0.380 | 0.22 | 0.54 | 1.7 | 4.2 | 8.3 | 20.3 |
| | 0.826 | 0.55 | 0.93 | 4.3 | 7.4 | 8.6 | 14.4 |
| A2BHI | 0.482 | 0.61 | 1.31 | 4.0 | 8.7 | 9.4 | 20.2 |
| | 0.457 | 1.06 | 1.73 | 7.1 | 11.6 | 13.2 | 21.5 |
| B1BHI | 0.297 | 0.49 | 0.84 | 7.3 | 12.5 | 14.1 | 24.4 |
| | 0.715 | 0.84 | 1.35 | 12.4 | 19.9 | 27.6 | 44.4 |
| B2BHI | 1.356 | 0.79 | 1.37 | 12.0 | 20.8 | 35.0 | 61.0 |
| | 2.010 | 0.96 | 1.31 | 13.9 | 19.0 | 28.7 | 39.0 |
| | 1.547 | 0.70 | 1.20 | 9.5 | 16.3 | 20.3 | 34.8 |
| B3MHI | 0.660 | 0.43 | 0.77 | 6.1 | 11.0 | 11.3 | 20.2 |
| | 0.484 | 0.58 | 1.12 | 8.8 | 17.0 | 14.8 | 28.3 |
| | 1.003 | 0.97 | 1.35 | 17.6 | 24.5 | 38.1 | 52.7 |
| *B4MPI | 0.222 | 0.30 | 0.44 | 3.1 | 4.5 | 8.6 | 12.7 |
| | 0.133 | 0.23 | 0.44 | 2.2 | 4.3 | 4.1 | 7.9 |
| B5BHI | 0.404 | 0.50 | 1.03 | 5.3 | 11.0 | 30.2 | 62.3 |
| | 0.254 | 0.57 | 1.41 | 5.5 | 13.8 | 10.6 | 26.2 |
| | 0.686 | 1.18 | 2.35 | 12.6 | 25.1 | 22.0 | 44.0 |
| C1MPI | 1.021 | 0.68 | 1.03 | 14.3 | 21.7 | 32.6 | 49.1 |
| | 0.724 | 0.35 | 0.81 | 6.7 | 15.4 | 13.3 | 30.4 |
| | 0.422 | 0.22 | 0.38 | 4.8 | 8.4 | 10.0 | 17.1 |
| C2MPI | 1.857 | 0.71 | 0.92 | 13.8 | 17.9 | 31.7 | 40.8 |
| | 1.915 | 0.58 | 0.86 | 11.7 | 17.4 | 28.8 | 43.0 |
| | 1.266 | 0.45 | 0.64 | 8.4 | 12.0 | 14.9 | 21.1 |
| C3MPI | 7.730 | 0.34 | 0.68 | 4.4 | 8.8 | 19.2 | 38.9 |
| | - | 0.62 | 0.93 | 9.9 | 14.9 | 17.6 | 26.7 |
| | - | 1.04 | 1.37 | 13.2 | 20.0 | 24.7 | 37.3 |

*Same site as U3MPI except scrubber bypassed.

## EMISSION FACTORS (Continued)

| SITE CODE | DRY Gr/SCF @12%CO2 | CATCH Lb/Hr | TOTAL Lb/Hr | DRY Lb/Ton Charge | TOTAL Lb/Ton Charge | Dry Lb/Ton Burn | TOTAL Lb/Ton Burn |
|---|---|---|---|---|---|---|---|
| C4BPI | 1.355 | 0.75 | 1.02 | 12.5 | 17.0 | 64.9 | 88.5 |
| | 1.262 | 0.62 | 0.85 | 12.2 | 16.7 | 33.2 | 44.6 |
| | 0.536 | 0.30 | 0.49 | 6.7 | 11.0 | 10.4 | 17.1 |
| | 0.559 | 0.31 | 0.58 | 5.7 | 10.6 | 10.3 | 19.2 |
| C5MPI | 0.207 | 0.16 | 0.50 | 2.4 | 7.4 | 11.1 | 34.2 |
| | 0.268 | 0.20 | 0.52 | 3.1 | 7.9 | 9.3 | 23.7 |
| | 0.339 | 0.24 | 0.58 | 3.6 | 8.7 | 9.4 | 23.3 |
| C6BPI | 0.669 | 0.62 | 0.93 | 11.7 | 17.5 | 15.9 | 23.8 |
| | 0.678 | 0.48 | 0.69 | 8.7 | 12.5 | 11.7 | 16.7 |
| | 0.621 | 0.46 | 1.79 | 8.5 | 33.1 | 13.9 | 54.2 |
| C7BPI | 2.618 | 2.73 | 4.29 | 31.2 | 49.0 | 58.1 | 91.3 |
| | 1.130 | 0.89 | 2.20 | 11.5 | 28.4 | 20.6 | 51.1 |
| | 0.934 | 0.65 | 1.77 | 8.6 | 23.3 | 20.6 | 56.2 |
| C8BPI | 0.505 | 0.34 | 0.62 | 7.5 | 13.6 | 10.8 | 19.5 |
| | 2.216 | 0.47 | 0.74 | 7.8 | 12.2 | 22.7 | 36.0 |
| C9MPI | 3.056 | 0.73 | 1.18 | 13.3 | 21.5 | 31.6 | 51.5 |
| | 0.676 | 0.36 | 0.66 | 6.2 | 11.4 | 11.1 | 20.8 |
| | 0.312 | 0.27 | 0.64 | 4.9 | 11.5 | 7.3 | 17.6 |
| C10MPI | 0.610 | 0.34 | 0.62 | 4.3 | 7.8 | 11.2 | 20.8 |
| | 1.853 | 0.88 | 1.29 | 11.1 | 16.2 | 27.2 | 39.6 |
| U1BPI | 1.240 | 1.48 | 2.28 | 10.2 | 15.7 | 41.0 | 63.3 |
| | 0.296 | 0.42 | 1.09 | 3.0 | 7.7 | 9.1 | 23.4 |
| | 0.393 | 0.51 | 0.89 | 3.9 | 6.8 | 9.9 | 17.4 |
| U2MPI | 0.458 | 0.42 | 0.78 | 8.0 | 14.9 | 13.8 | 24.8 |
| | 0.233 | 0.14 | 0.28 | 2.4 | 4.8 | 5.3 | 10.4 |
| U3MPI | 0.146 | 0.25 | 0.48 | 3.2 | 6.2 | 9.3 | 18.3 |
| | 0.088 | 0.15 | 0.38 | 2.3 | 5.9 | 2.7 | 6.6 |
| U4BHI | 0.209 | 0.41 | 0.65 | 2.4 | 3.8 | 6.5 | 10.2 |
| | 0.219 | 0.41 | 0.62 | 2.5 | 3.7 | 5.6 | 8.5 |

TABLE 7

AVERAGE INCINERATOR EMISSION FACTORS

DRY (FILTER) CATCH ONLY

| Incinerator Category | Manhattan Gr/SCF @ 12% $CO_2$ | Manhattan lb/hr | Manhattan lb/ton Charged | Manhattan lb/ton Burned | Bronx Gr/SCF @ 12% $CO_2$ | Bronx lb/hr | Bronx lb/ton Charged | Bronx lb/ton Burned |
|---|---|---|---|---|---|---|---|---|
| A | 0.810 | 0.42 | 3.2 | 20.8 | 0.470 | 0.84 | 5.6 | 11.3 |
| B | 0.500 | 0.50 | 7.6 | 15.4 | 0.909 | 0.75 | 9.8 | 23.6 |
| C | 1.484 | 0.48 | 8.0 | 18.3 | 1.090 | 0.72 | 11.1 | 24.4 |
| U | 0.231 | 0.24 | 4.0 | 7.8 | 0.471 | 0.65 | 4.4 | 14.4 |
| | Average of All Sources | | | | 0.959 gr/SCF @ 12% $CO_2$<br>0.58 lb/hr<br>7.9 lb/ton Charged<br>18.9 lb/ton Burned | | | |

TOTAL (FILTER + IMPINGER) CATCH

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| A | - | 0.74 | 5.8 | 35.2 | - | 1.52 | 10.2 | 20.9 |
| B | - | 0.82 | 12.3 | 24.4 | - | 1.36 | 17.3 | 42.0 |
| C | - | 0.81 | 13.5 | 31.5 | - | 1.33 | 20.4 | 43.2 |
| U | - | 0.48 | 8.0 | 15.0 | - | 1.11 | 7.5 | 24.6 |
| | Average of All Sources | | | | 1.03 lb/hr<br>13.9 lb/ton Charged<br>32.9 lb/ton Burned | | | |

TABLE 8

INCINERATOR OPERATION

| Site Code | Average Orsats %$CO_2$ | Average Orsats %$O_2$ | Average Orsats %CO | Range of Ringlemann No. |
|---|---|---|---|---|
| A1MHI | .8 | 14.6 | 0.0 | 0 |
| A2BHI | 1.5 | 18.9 | 0.1 | N.A. |
| B1BHI | 2.2 | 17.6 | 0.0 | N.A. |
| B2BHI | 0.7 | 18.9 | 0.1 | <1 |
| B3MHI | 1.5 | 19.0 | 0.0 | <1-1 |
| B4MPI | 1.8 | 17.6 | 0.6 | 0-1 |
| B5BHI | 1.8 | 18.1 | 0.2 | .5 |
| C1MPI | 1.4 | 19.2 | 0.0 | <1 |
| C2MPI | 1.3 | 19.0 | 0.1 | 2.5 |
| C3MPI | 0.1 | 20.2 | 0.0 | <1-2 |
| C4BPI | 1.3 | 19.4 | 0.1 | <1 |
| C5MPI | 1.2 | 19.2 | 0.1 | N.A. |
| C6BPI | 1.7 | 18.2 | 0.1 | N.A. |
| C7BPI | 1.3 | 17.4 | 0.1 | <1 |
| C8BPI | 1.1 | 19.6 | 0.0 | 1-3 |
| C9MPI | 0.9 | 19.7 | 0.0 | 1-2 |
| C10MPI | 1.0 | 19.6 | 0.1 | <1 |
| U1BPI | 1.8 | 18.2 | 0.1 | 0-1 |
| U2MPI | 1.5 | 19.0 | 0.1 | <1 |
| U3MPI | 1.8 | 17.6 | 0.6 | 0-1 |
| U4BHI | 1.9 | 18.2 | 0.1 | <1 |

N.A. - Not Available

## DISCUSSION OF RESULTS

### Site Criteria

The pre-test inspections revealed the list of possible sites was in error in several ways. Many of the listed sites had been razed and many of the listed sites were outside the geographic area selected for the study. In addition, many of the sites were listed in an incorrect category, and many sites did not burn No. 6 fuel oil. Better than half the listed sites were owned by the Public Housing Authority. It is apparent that the number of sites assigned to a given category is incorrect and the total number of actual installations is also inaccurate.

An additional complication of the site criteria relates to the status of "upgraded" and how it is defined. On the surface it would appear that any installation with a Certificate to Operate issued by the New York City Department of Air Resources should be considered an upgraded unit. Some of these certificates signify compliance with obsolete rules, therefore, the "upgraded" category is not uniform as a group. Furthermore, some installations classified as in "A" category were in fact simply awaiting the processing of permits since they satisfied all the equipment requirements of the "upgraded" status. In consideration of the above difficulties, a simple arithmetic average of all the emission factors was considered appropriate.

Our method of gaining access to sites for testing was prompted by the time limits established for the study and the large number of sites to be tested during the specified time period. Many private apartment houses are owned by groups of individuals (corporations). While this fact to some extent facilitated gaining access for testing, it was curious that they granted permission to test at some sites but not at others. It is our belief we did not receive permission to test sites known to be in non-compliance or known to be in a state of serious disrepair. This observation is based on the refusal by many owners to allow us to test sites which were under orders by New York City Department of Air Resources to upgrade by December 31, 1973, and on the admission by some owners they would only allow us to test sites which they were confident would meet the New York City Code. A frequent observation by the test personnel and EPA observers was that smoke of number three Ringelmann, or greater, was discharged from several chimneys in the vicinity of each test but rarely by the site being tested.

### Boilers

In addition to the uncertainties associated with site criteria, the following factors must be considered in evaluating the validity of our results:

a. The fact that most burners operated continuously during the morning, albeit the weather was mild, suggests the installations had been adjusted for summer operation, or were capable by design of operating at a lower burning level. Most sites were equipped with modulating type burner controls

which could run continuously at a lower burning rate. Since the average outdoor temperature was approximately 56°F the project may not have sampled emissions that would be representative of yearly operation. (See Appendix F for tests conducted during colder weather).

b. The use of stack inserts, while necessary to expedite tne project and obtain measurable stack velocities must be regarded as an added resistance to the chimney draft, with the expectation that reduced draft may alter the emissions.

c. We experienced problems with maintaining heat to the probes for a variety of reasons. Although retests were conducted whenever we were aware the probe was not heating properly, an examination of the laboratory reports reveals considerable fluctuation in the material washed from the probes. We are aware that unheated probes might allow the formation of sulphates.

d. We also have doubts about being able to completely clean the glass probes at the end of each test run. Our usual practice of flushing the probe at least twice, with acetone, has usually proven satisfactory. We note that failure to remove all adhering particulates could distort the results of both the test completed and a following test run.

e. A study of the tabulated emissions from each boiler site readily reveals that although essentially simultaneous tests were accomplished, the results from some of these tests differ by 300% or more. Accepting the vagaries of particulate material in a gas stream, and allowing for slight differences in the sampling trains or their operation, there is no reason to expect the results from the two trains to be identical but they should be much closer than some of the results we have obtained.

The emission factors shown in Table 4 do not display as clear a relationship between emissions and the degree of upgrading as might be expected. The lack of correlation may be due to faulty listing by category, faulty testing procedures, an inadequate number of tested sites, or factors which might override the effect of upgrading such as proper maintenance, or operation at less than full capacity, or all of these.

A comparison of Orsat, Bacharach, and Ringlemann readings in Table 1 reveals no clear relationship. Missing Orsat readings were caused by punctured sample bags or inoperative pumps. Some Bacharach readings could not be taken since the breeching was inaccessible. Missing Ringlemann observations were caused by inadequate communication between the test teams, supervising personnel, and the project engineer.

A study of the results of soot blow tests indicates that emissions during soot blowing are generally more than those during non-soot blowing operation as would be expected. Soot blow tests were conducted using chimney ports and extremely low velocities were present. Even use of a micromanometer could not produce velocity head readings which could be considered accurate, therefore, the quantitative results are considered questionable.

## Incinerators

In addition to the uncertainties associated with site criteria, the following factors must be considered in evaluating the validity of our results:

a. The urgency of the project did not permit a sufficient study of the typical operating level of each incinerator. Charging levels were determined either from calculation or the statements of the building superintendent. It is entirely possible that everyday refuse is charged at higher or lower levels than those utilized in this project.

b. The test procedures mandated a thorough cleaning of the grates and ashpit of the incinerator before each test. It is very doubtful that such procedures are daily routine at most installations.

c. Charging hopper doors were taped shut to prevent additional, undeterminable loading during the tests; this procedure was unavoidable. Additional charging during the burning period would certainly disturb the burning bed and create additional emission of ash.

d. The use of stack inserts, as previously discussed, might change the emissions.

A study of the tabulated emissions from each incinerator site (Table 6) reveals that consecutive tests did not always result in similar emissions even when similar quantities of refuse were charged or burned. Since actual apartment house refuse was burned during the project, differences in composition of the refuse would be expected to produce different levels of emissions. Of the twenty-one sites tested, ten show a pattern of decreasing emissions with each consecutive test run; six show a pattern of increasing emissions with each consecutive test run. We did not collect sufficient data to associate these patterns with the incinerator design or operation.

When the incinerator tests results are viewed individually, there appears to be no consistency of the results with upgrading category. When averages of the emissions are studied in Table 7, there is a clear difference between the emissions from upgraded and non-upgraded incinerator installations and a less decisive pattern of emissions related to categories of non-upgraded units.

A comparison of Orsat and Ringlemann readings in Table 8 discloses a clear relationship between a low percentage of oxygen and zero Ringlemann observations.

## CONCLUSIONS

The emission factors determined by this study of apartment house boilers burning low sulfur #6 fuel oil can be considered as average emissions during mild weather operation. The emission factors for apartment house flue-fed incinerators are as representative as can be obtained under the conditions necessary for performance of stack tests.

APPENDIX A

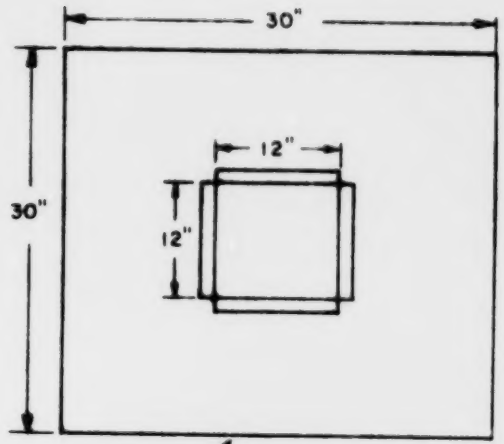
A-2 - Stack Insert

A-3 - Oil Meter Performance Curve

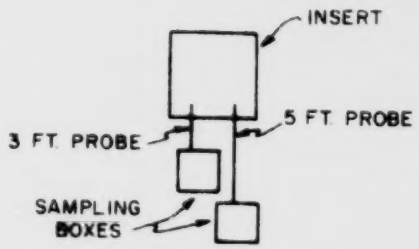
A-4 - Oil Meter Recalibration Results

FIGURE 1 **STACK INSERT**

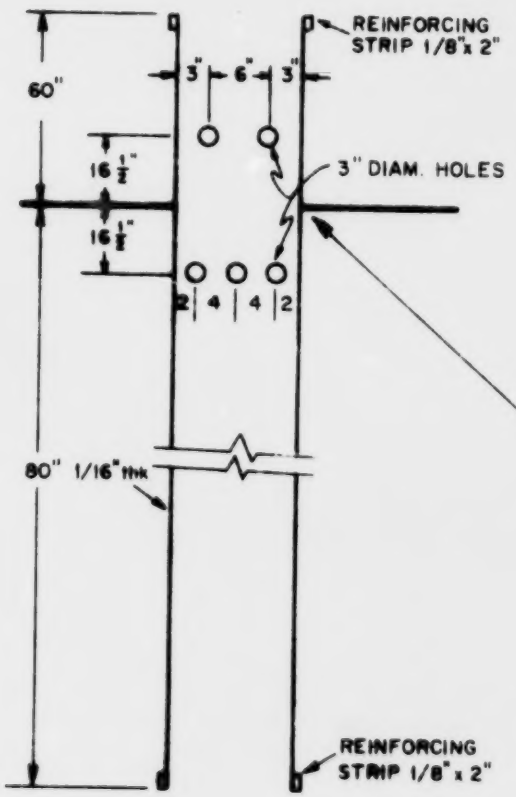
(NOT TO SCALE)



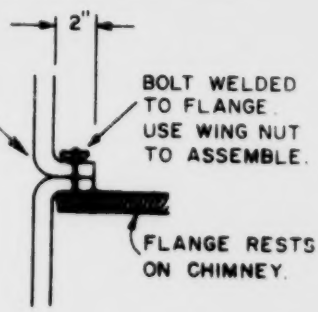

TWO ADDITIONAL FLANGES 36 x 36 x 1/8" THICK
48 x 48 x 1/8" THICK




Sketch of insert in use at boiler sites showing arrangement of sampling boxes.




Detail of Assembly




NOTES: 1 MATERIAL - ALUMINUM
2 ALL SEAMS WELDED

LOSS OF HEAD CURVE OF 5/8" TYPE "S" DISK METER FOR WATER

NEPTUNE METER CO.

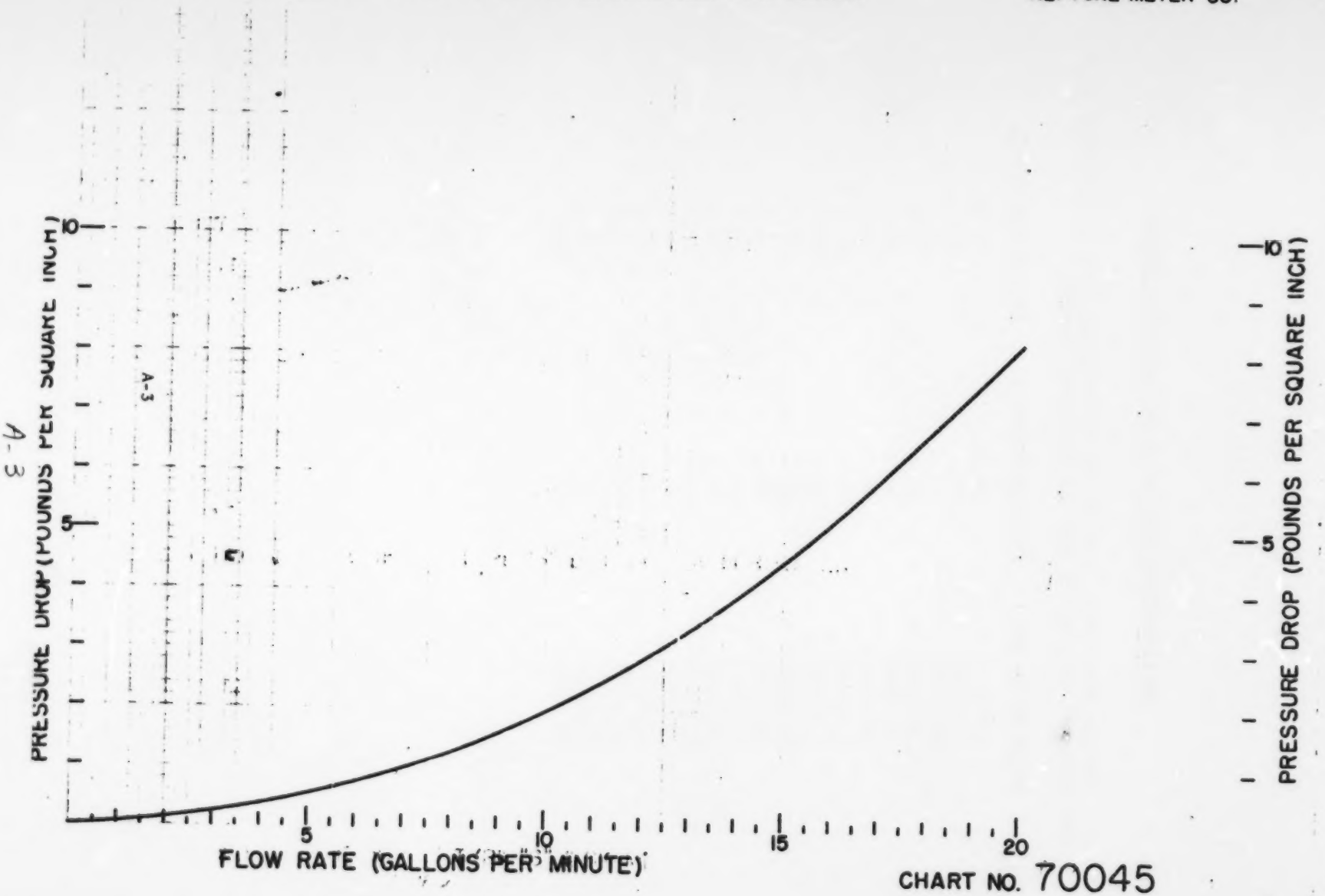



CHART NO. 70045

## Recalibration Results of Fuel Oil Flow Meters

The oil flow meters used during this project were recalibrated at the conclusion of the project with the following results:

| Meter Serial No. | First Test Result | Second Test Result |
|---|---|---|
| 19775485 | 99.9% | 99.8% |
| 19775488 | 100.0 | 100.1 |
| 19775493 | 99.9 | 100.5 |
| 19775494 | 99.9 | 99.9 |
| 19775495 | 99.9 | 100.1 |
| 19775496 | 20.0 | 100.8 |
| 19775497 | 101.0 | 101.2 |
| 19775498 | 100.4 | 100.2 |
| 19775502 | 99.9 | 100.1 |
| 19775508 | 100.2 | 100.1 |
| 19775513 | 99.8 | 99.6 |
| 19775514 | 100.2 | 100.0 |
| 19775518 | 100.2 | 100.0 |
| 20764004 | 106.8 | 107.0 |
| 20764007 | 98.8 | 98.6 |
| 20764008 | 101.6 | 101.4 |
| 20764009 | 109.0 | 108.9 |
| 20764010 | 100.1 | 100.0 |
| 20764230 | 101.0 | 101.2 |
| 20764331 | 100.2 | 100.3 |

Recalibration was performed by Roman Tank Inc.
37-19 23rd Street
Long Island City, New York

# APPENDIX B

## Computer Printout of Emission Data

NOTE

The units shown for particulate emissions from boilers should read lb/1000 gal., not lb/ton as shown.

PLANT: A1BHB
LOCATION: NYC
OPERATOR: ERI

## PARTICULATE SUMMARY IN ENGLISH UNITS

| DESCRIPTION | UNITS | 1 | AVERAGE |
|---|---|---|---|
| DATE OF RUN | | 06-04-73 | |
| STACK AREA | FT2 | 40.100 | |
| NET TIME OF RUN | MIN | 64.0 | |
| BAROMETRIC PRESSURE | IN.HG | 30.00 | |
| AVG ORIFICE PRES DROP | IN.H2O | 1.500 | |
| VOL DRY GAS-METER COND | DCF | 44.10 | |
| AVG GAS METER TEMP | DEG.F | 98.5 | |
| VOL DRY GAS-STD COND | DSCF | 42.11 | |
| TOTAL H2O COLLECTED | ML | 54.3 | |
| VOL H2O VAPOR-STD COND | SCF | 2.57 | |
| PERCENT MOISTURE BY VOL | | 5.8 | |
| MOLE FRACTION DRY GAS | | 0.942 | |
| PERCENT CO2 BY VOL, DRY | | 1.8 | |
| PERCENT O2 BY VOL, DRY | | 18.3 | |
| PERCENT CO BY VOL, DRY | | 0.0 | |
| PERCENT N2 BY VOL, DRY | | 79.9 | |
| MOLECULAR WT-DRY STK GAS | | 29.02 | |
| MOLECULAR WT-STK GAS | | 28.39 | |
| AVG STACK TEMPERATURE | DEG.F | 156.0 | |
| NET SAMPLING POINTS | | 1 | |
| STACK PRESSURE, ABSOLUTE | IN.HG | 30.00 | |
| AVG STACK GAS VELOCITY | FPS | 4.375 | 4.375 |
| STK FLOWRATE, DRY,STD CN | DSCFM | 8555. | 8555. |
| ACTUAL STACK FLOWRATE | ACFM | 10526. | 10526. |
| PERCENT ISOKINETIC | | 100.5 | 100.5 |
| PARTICULATE WT-PARTIAL | MG | 41.20 | 41.20 |
| PARTICULATE WT-TOTAL | MG | 77.80 | 77.80 |
| PERC IMPINGER CATCH | | 47.0 | 47.0 |
| PART. LOAD-PTL,STD CN | GR/DSCF | 0.01507 | 0.01507 |
| PART. LOAD-TTL,STD CN | GR/DSCF | 0.02845 | 0.02845 |
| PART. LOAD-PTL,STD CN @ 12% CO2 | | 0.10046 | 0.10046 |
| PART. LOAD-TTL,STD CN @ 12% CO2 | | 0.18970 | 0.18970 |
| PART. LOAD-PTL,STK CN | GR/ACF | 0.01224 | 0.01224 |
| PART. LOAD-TTL,STK CN | GR/ACF | 0.02312 | 0.02312 |
| PARTIC EMIS-PARTIAL | LB/HR | 1.10 | 1.10 |
| PARTIC EMIS-TOTAL | LB/HR | 2.09 | 2.09 |
| PART EMIS/WT PRD FD PTL | LB/TON | 16.29787 | 16.29787 |
| PART EMIS/WT PRD FD TTL | LB/TON | 30.77606 | 30.77606 |
| PERCENT EXCESS AIR | | 655.1 | 655.1 |

PLANT: A1BHB...CONTINUED
LOCATION: NYC
OPERATOR: ERI

## PARTICULATE SUMMARY IN ENGLISH UNITS

| DESCRIPTION | UNITS | 2 | 3 | AVERAGE |
|---|---|---|---|---|
| DATE OF RUN | | 06-05-73 | 06-05-73 | |
| STACK AREA | FT2 | 40.100 | 40.100 | |
| NET TIME OF RUN | MIN | 32.0 | 32.0 | |
| BAROMETRIC PRESSURE | IN.HG | 30.00 | 30.00 | |
| AVG ORIFICE PRES DROP | IN.H2O | 1.800 | 1.900 | |
| VOL DRY GAS-METER COND | DCF | 22.56 | 24.75 | |
| AVG GAS METER TEMP | DEG.F | 92.5 | 99.0 | |
| VOL DRY GAS-STD COND | DSCF | 21.79 | 23.63 | |
| TOTAL H2O COLLECTED | ML | 23.0 | 25.0 | |
| VOL H2O VAPOR-STD COND | SCF | 1.09 | 1.18 | |
| PERCENT MOISTURE BY VOL | | 4.8 | 4.8 | |
| MOLE FRACTION DRY GAS | | 0.952 | 0.952 | |
| PERCENT CO2 BY VOL, DRY | | 1.8 | 1.8 | |
| PERCENT O2 BY VOL, DRY | | 18.3 | 18.3 | |
| PERCENT CO BY VOL, DRY | | 0.0 | 0.0 | |
| PERCENT N2 BY VOL, DRY | | 79.9 | 79.9 | |
| MOLECULAR WT-DRY STK GAS | | 29.02 | 29.02 | |
| MOLECULAR WT-STK GAS | | 28.49 | 28.49 | |
| AVG STACK TEMPERATURE | DEG.F | 171.0 | 171.0 | |
| NET SAMPLING POINTS | | 1 | 1 | |
| STACK PRESSURE, ABSOLUTE | IN.HG | 30.00 | 30.00 | |
| AVG STACK GAS VELOCITY | FPS | 4.746 | 4.747 | 4.747 |
| STK FLOWRATE, DRY,STD CN | DSCFM | 9157. | 9157. | 9157. |
| ACTUAL STACK FLOWRATE | ACFM | 11420. | 11420. | 11420. |
| PERCENT ISOKINETIC | | 97.2 | 105.4 | 101.3 |
| PARTICULATE WT-PARTIAL | MG | 18.60 | 16.80 | 17.70 |
| PARTICULATE WT-TOTAL | MG | 39.30 | 41.10 | 40.20 |
| PERC IMPINGER CATCH | | 52.7 | 59.1 | 55.9 |
| PART. LOAD-PTL,STD CN | GR/DSCF | 0.01315 | 0.01095 | 0.01205 |
| PART. LOAD-TTL,STD CN | GR/DSCF | 0.02778 | 0.02678 | 0.02728 |
| PART. LOAD-PTL,STD CN @ 12% CO2 | | 0.08764 | 0.07298 | 0.08031 |
| PART. LOAD-TTL,STD CN @ 12% CO2 | | 0.18517 | 0.17855 | 0.18186 |
| PART. LOAD-PTL,STK CN | GR/ACF | 0.01054 | 0.00877 | 0.00965 |
| PART. LOAD-TTL,STK CN | GR/ACF | 0.02226 | 0.02146 | 0.02186 |
| PARTIC EMIS-PARTIAL | LB/HR | 1.03 | 0.86 | 0.95 |
| PARTIC EMIS-TOTAL | LB/HR | 2.18 | 2.10 | 2.14 |
| FART EMIS/WT PRD FD PTL | LB/TON | 10.90738 | 9.08266 | 9.99502 |
| PART EMIS/WT PRD FD TTL | LB/TON | 23.04622 | 22.22008 | 22.63315 |
| PERCENT EXCESS AIR | | 655.1 | 655.1 | 655.1 |

PLANT: A1BHB(SOOT)
LOCATION: NYC
OPERATOR: ERI

## PARTICULATE SUMMARY IN ENGLISH UNITS

| DESCRIPTION | UNITS | 4 | 5 | AVERAGE |
|---|---|---|---|---|
| DATE OF RUN | | 06-22-73 | 06-22-73 | |
| STACK AREA | FT2 | 40.100 | 40.100 | |
| NET TIME OF RUN | MIN | 32.0 | 32.0 | |
| BAROMETRIC PRESSURE | IN.HG | 29.50 | 29.50 | |
| AVG ORIFICE PRES DROP | IN.H2O | 2.700 | 1.900 | |
| VOL DRY GAS-METER COND | DCF | 28.27 | 23.08 | |
| AVG GAS METER TEMP | DEG.F | 97.0 | 99.0 | |
| VOL DRY GAS-STD COND | DSCF | 26.70 | 21.67 | |
| TOTAL H2O COLLECTED | ML | 23.8 | 17.2 | |
| VOL H2O VAPOR-STD COND | SCF | 1.13 | 0.82 | |
| PERCENT MOISTURE BY VOL | | 4.1 | 3.6 | |
| MOLE FRACTION DRY GAS | | 0.959 | 0.964 | |
| PERCENT CO2 BY VOL, DRY | | 2.0 | 2.0 | |
| PERCENT O2 BY VOL, DRY | | 17.8 | 17.8 | |
| PERCENT CO BY VOL, DRY | | 0.0 | 0.0 | |
| PERCENT N2 BY VOL, DRY | | 80.2 | 80.2 | |
| MOLECULAR WT-DRY STK GAS | | 29.03 | 29.03 | |
| MOLECULAR WT-STK GAS | | 28.58 | 28.63 | |
| AVG STACK TEMPERATURE | DEG.F | 164.0 | 164.0 | |
| NET SAMPLING POINTS | | 1 | 1 | |
| STACK PRESSURE, ABSOLUTE | IN.HG | 29.50 | 29.50 | |
| AVG STACK GAS VELOCITY | FPS | 5.935 | 4.700 | 5.318 |
| STK FLOWRATE, DRY,STD CN | DSCFM | 11471. | 9125. | 10298. |
| ACTUAL STACK FLOWRATE | ACFM | 14280. | 11308. | 12794. |
| PERCENT ISOKINETIC | | 95.1 | 97.0 | 96.1 |
| PARTICULATE WT-PARTIAL | MG | 21.00 | 15.20 | 18.10 |
| PARTICULATE WT-TOTAL | MG | 61.20 | 39.80 | 50.50 |
| PERC IMPINGER CATCH | | 65.7 | 61.8 | 63.7 |
| PART. LOAD-PTL,STD CN | GR/DSCF | 0.01211 | 0.01080 | 0.01146 |
| PART. LOAD-TTL,STD CN | GR/DSCF | 0.03530 | 0.02828 | 0.03179 |
| PART. LOAD-PTL,STD CN @ 12% CO2 | | 0.07268 | 0.06481 | 0.06874 |
| PART. LOAD-TTL,STD CN @ 12% CO2 | | 0.21180 | 0.16970 | 0.19075 |
| PART. LOAD-PTL,STK CN | GR/ACF | 0.00972 | 0.00871 | 0.00922 |
| PART. LOAD-TTL,STK CN | GR/ACF | 0.02834 | 0.02281 | 0.02557 |
| PARTIC EMIS-PARTIAL | LB/HR | 1.19 | 0.84 | 1.02 |
| PARTIC EMIS-TOTAL | LB/HR | 3.47 | 2.21 | 2.84 |
| PART EMIS/WT PRD FD PTL | LB/TON | 13.35152 | 9.47101 | 11.41127 |
| PART EMIS/WT PRD FD TTL | LB/TON | 38.91016 | 24.79909 | 31.85461 |
| PERCENT EXCESS AIR | | 527.8 | 527.8 | 527.8 |

.ANT: A2BPB
LOCATION: NYC
OPERATOR: ERI

## PARTICULATE SUMMARY IN ENGLISH UNITS

| DESCRIPTION | UNITS | 1 | 2 | AVERAGE |
|---|---|---|---|---|
| DATE OF RUN | | 05-04-73 | 05-04-73 | |
| STACK AREA | FT2 | 1.000 | 1.000 | |
| NET TIME OF RUN | MIN | 60.0 | 60.0 | |
| BAROMETRIC PRESSURE | IN.HG | 30.36 | 30.36 | |
| AVG ORIFICE PRES DROP | IN.H2O | 1.094 | 1.150 | |
| VOL DRY GAS-METER COND | DCF | 35.37 | 34.56 | |
| AVG GAS METER TEMP | DEG.F | 75.9 | 80.4 | |
| VOL DRY GAS-STD COND | DSCF | 35.57 | 34.49 | |
| TOTAL H2O COLLECTED | ML | 46.0 | 40.0 | |
| VOL H2O VAPOR-STD COND | SCF | 2.18 | 1.90 | |
| PERCENT MOISTURE BY VOL | | 5.8 | 5.2 | |
| MOLE FRACTION DRY GAS | | 0.942 | 0.948 | |
| PERCENT CO2 BY VOL, DRY | | 5.2 | 5.2 | |
| PERCENT O2 BY VOL, DRY | | 11.8 | 11.8 | |
| PERCENT CO BY VOL, DRY | | 0.1 | 0.1 | |
| PERCENT N2 BY VOL, DRY | | 82.9 | 82.9 | |
| MOLECULAR WT-DRY STK GAS | | 29.30 | 29.30 | |
| MOLECULAR WT-STK GAS | | 28.65 | 28.71 | |
| AVG STACK TEMPERATURE | DEG.F | 250.0 | 250.0 | |
| NET SAMPLING POINTS | | 1 | 1 | |
| STACK PRESSURE, ABSOLUTE | IN.HG | 30.36 | 30.36 | |
| AVG STACK GAS VELOCITY | FPS | 38.212 | 37.820 | 38.016 |
| STK FLOWRATE, DRY,STD CN | DSCFM | 1636. | 1629. | 1632. |
| ACTUAL STACK FLOWRATE | ACFM | 2293. | 2269. | 2281. |
| PERCENT ISOKINETIC | | 106.3 | 103.5 | 104.9 |
| PARTICULATE WT-PARTIAL | MG | 136.10 | 145.60 | 140.85 |
| PARTICULATE WT-TOTAL | MG | 196.60 | 183.10 | 189.85 |
| PERC IMPINGER CATCH | | 30.8 | 20.5 | 25.6 |
| PART. LOAD-PTL,STD CN | GR/DSCF | 0.05892 | 0.06502 | 0.06197 |
| PART. LOAD-TTL,STD CN | GR/DSCF | 0.08511 | 0.08177 | 0.08344 |
| PART. LOAD-PTL,STD CN @ 12% CO2 | | 0.13596 | 0.15005 | 0.14301 |
| PART. LOAD-TTL,STD CN @ 12% CO2 | | 0.19640 | 0.18869 | 0.19255 |
| PART. LOAD-PTL,STK CN | GR/ACF | 0.04202 | 0.04665 | 0.04433 |
| PART. LOAD-TTL,STK CN | GR/ACF | 0.06070 | 0.05866 | 0.05968 |
| PARTIC EMIS-PARTIAL | LB/HR | 0.83 | 0.91 | 0.87 |
| PARTIC EMIS-TOTAL | LB/HR | 1.19 | 1.14 | 1.17 |
| PART EMIS/WT PRD FD PTL | LB/TON | 25.73819 | 28.28104 | 27.00961 |
| PART EMIS/WT PRD FD TTL | LB/TON | 37.17947 | 35.56494 | 36.37221 |
| PERCENT EXCESS AIR | | 115.9 | 115.9 | 115.9 |

PLANT: A38HB
LOCATION: NYC
OPERATOR: ERI

## PARTICULATE SUMMARY IN ENGLISH UNITS

| DESCRIPTION | UNITS | 1 | 2 | AVERAGE |
|---|---|---|---|---|
| DATE OF RUN | | 06-23-73 | 06-23-73 | |
| STACK AREA | FT2 | 58.800 | 58.800 | |
| NET TIME OF RUN | MIN | 64.0 | 64.0 | |
| BAROMETRIC PRESSURE | IN.HG | 29.58 | 29.58 | |
| AVG ORIFICE PRES DROP | IN.H2O | 2.300 | 2.980 | |
| VOL DRY GAS-METER COND | DCF | 50.25 | 60.13 | |
| AVG GAS METER TEMP | DEG.F | 100.2 | 106.2 | |
| VOL DRY GAS-STD COND | DSCF | 47.26 | 56.04 | |
| TOTAL H2O COLLECTED | ML | 24.0 | 31.1 | |
| VOL H2O VAPOR-STD COND | SCF | 1.14 | 1.47 | |
| PERCENT MOISTURE BY VOL | | 2.4 | 2.6 | |
| MOLE FRACTION DRY GAS | | 0.976 | 0.974 | |
| PERCENT CO2 BY VOL, DRY | | 0.7 | 0.7 | |
| PERCENT O2 BY VOL, DRY | | 19.8 | 19.8 | |
| PERCENT CO BY VOL, DRY | | 0.1 | 0.1 | |
| PERCENT N2 BY VOL, DRY | | 79.4 | 79.4 | |
| MOLECULAR WT-DRY STK GAS | | 28.90 | 28.90 | |
| MOLECULAR WT-STK GAS | | 28.65 | 28.62 | |
| AVG STACK TEMPERATURE | DEG.F | 147.0 | 147.0 | |
| NET SAMPLING POINTS | | 1 | 1 | |
| STACK PRESSURE, ABSOLUTE | IN.HG | 29.58 | 29.58 | |
| AVG STACK GAS VELOCITY | FPS | 5.079 | 5.736 | 5.407 |
| STK FLOWRATE, DRY,STD CN | DSCFM | 15102. | 17016. | 16059. |
| ACTUAL STACK FLOWRATE | ACFM | 17920. | 20235. | 19077. |
| PERCENT ISOKINETIC | | 93.7 | 98.6 | 96.2 |
| PARTICULATE WT-PARTIAL | MG | 15.40 | 14.20 | 14.80 |
| PARTICULATE WT-TOTAL | MG | 44.60 | 51.90 | 48.25 |
| PERC IMPINGER CATCH | | 65.5 | 72.6 | 69.1 |
| PART. LOAD-PTL,STD CN | GR/DSCF | 0.00502 | 0.00390 | 0.00446 |
| PART. LOAD-TTL,STD CN | GR/DSCF | 0.01453 | 0.01426 | 0.01440 |
| PART. LOAD-PTL,STD CN @ 12% CO2 | | 0.08602 | 0.06690 | 0.07646 |
| PART. LOAD-TTL,STD CN @ 12% CO2 | | 0.24913 | 0.24450 | 0.24682 |
| PART. LOAD-PTL,STK CN | GR/ACF | 0.00423 | 0.00328 | 0.00375 |
| PART. LOAD-TTL,STK CN | GR/ACF | 0.01224 | 0.01199 | 0.01211 |
| PARTIC EMIS-PARTIAL | LB/HR | 0.65 | 0.57 | 0.61 |
| PARTIC EMIS-TOTAL | LB/HR | 1.88 | 2.08 | 1.98 |
| PART EMIS/WT PRD FD PTL | LB/TON | 8.17051 | 7.15919 | 7.66485 |
| PART EMIS/WT PRD FD TTL | LB/TON | 23.66264 | 26.16632 | 24.91447 |
| PERCENT EXCESS AIR | | 1630.1 | 1630.1 | 1630.1 |

PLANT: A3BHB(SOOT)
LOCATION: NYC
OPERATOR: ERI

## PARTICULATE SUMMARY IN ENGLISH UNITS

| DESCRIPTION | UNITS | 3 | 4 | AVERAGE |
|---|---|---|---|---|
| DATE OF RUN | | 06-23-73 | 06-23-73 | |
| STACK AREA | FT2 | 58.800 | 58.800 | |
| NET TIME OF RUN | MIN | 32.0 | 32.0 | |
| BAROMETRIC PRESSURE | IN.HG | 29.56 | 29.56 | |
| AVG ORIFICE PRES DROP | IN.H2O | 2.180 | 2.610 | |
| VOL DRY GAS-METER COND | DCF | 24.90 | 27.91 | |
| AVG GAS METER TEMP | DEG.F | 102.8 | 107.1 | |
| VOL DRY GAS-STD COND | DSCF | 23.29 | 25.94 | |
| TOTAL H2O COLLECTED | ML | 19.0 | 18.9 | |
| VOL H2O VAPOR-STD COND | SCF | 0.90 | 0.90 | |
| PERCENT MOISTURE BY VOL | | 3.7 | 3.3 | |
| MOLE FRACTION DRY GAS | | 0.963 | 0.967 | |
| PERCENT CO2 BY VOL, DRY | | 0.5 | 0.5 | |
| PERCENT O2 BY VOL, DRY | | 20.3 | 20.3 | |
| PERCENT CO BY VOL, DRY | | 0.0 | 0.0 | |
| PERCENT N2 BY VOL, DRY | | 79.2 | 79.2 | |
| MOLECULAR WT-DRY STK GAS | | 28.89 | 28.89 | |
| MOLECULAR WT-STK GAS | | 28.49 | 28.53 | |
| AVG STACK TEMPERATURE | DEG.F | 142.0 | 142.0 | |
| NET SAMPLING POINTS | | 1 | 1 | |
| STACK PRESSURE, ABSOLUTE | IN.HG | 29.56 | 29.56 | |
| AVG STACK GAS VELOCITY | FPS | 4.960 | 5.542 | 5.251 |
| STK FLOWRATE, DRY,STD CN | DSCFM | 14651. | 16435. | 15543. |
| ACTUAL STACK FLOWRATE | ACFM | 17499. | 19552. | 18526. |
| PERCENT ISOKINETIC | | 95.2 | 94.5 | 94.9 |
| PARTICULATE WT-PARTIAL | MG | 22.80 | 31.30 | 27.05 |
| PARTICULATE WT-TOTAL | MG | 59.70 | 56.40 | 58.05 |
| PERC IMPINGER CATCH | | 61.8 | 44.5 | 53.2 |
| PART. LOAD-PTL,STD CN | GR/DSCF | 0.01508 | 0.01859 | 0.01683 |
| PART. LOAD-TTL,STD CN | GR/DSCF | 0.03948 | 0.03349 | 0.03649 |
| PART. LOAD-PTL,STD CN @ 12% CO2 | | 0.36188 | 0.44604 | 0.40396 |
| PART. LOAD-TTL,STD CN @ 12% CO2 | | 0.94755 | 0.80373 | 0.87564 |
| PART. LOAD-PTL,STK CN | GR/ACF | 0.01262 | 0.01561 | 0.01412 |
| PART. LOAD-TTL,STK CN | GR/ACF | 0.03304 | 0.02813 | 0.03059 |
| PARTIC EMIS-PARTIAL | LB/HR | 1.89 | 2.62 | 2.26 |
| PARTIC EMIS-TOTAL | LB/HR | 4.96 | 4.72 | 4.84 |
| PART EMIS/WT PRD FD PTL | LB/TON | 29.91415 | 41.36099 | 35.63757 |
| PART EMIS/WT PRD FD TTL | LB/TON | 78.32790 | 74.52907 | 76.42847 |
| PERCENT EXCESS AIR | | 3334.5 | 3334.5 | 3334.5 |

PLANT: A4MPB
LOCATION: NYC
OPERATOR: ERI

## PARTICULATE SUMMARY IN ENGLISH UNITS

| DESCRIPTION | UNITS | 1 | 2 | AVERAGE |
|---|---|---|---|---|
| DATE OF RUN | | 04-14-73 | 04-14-73 | |
| STACK AREA | FT2 | 8.125 | 8.125 | |
| NET TIME OF RUN | MIN | 63.0 | 63.0 | |
| BAROMETRIC PRESSURE | IN.HG | 30.36 | 30.36 | |
| AVG ORIFICE PRES DROP | IN.H2O | 0.891 | 0.832 | |
| VOL DRY GAS-METER COND | DCF | 31.69 | 31.31 | |
| AVG GAS METER TEMP | DEG.F | 64.7 | 78.9 | |
| VOL DRY GAS-STD COND | DSCF | 32.55 | 31.31 | |
| TOTAL H2O COLLECTED | ML | 19.8 | 15.0 | |
| VOL H2O VAPOR-STD COND | SCF | 0.94 | 0.71 | |
| PERCENT MOISTURE BY VOL | | 2.8 | 2.2 | |
| MOLE FRACTION DRY GAS | | 0.972 | 0.978 | |
| PERCENT CO2 BY VOL, DRY | | 3.0 | 3.0 | |
| PERCENT O2 BY VOL, DRY | | 14.5 | 14.5 | |
| PERCENT CO BY VOL, DRY | | 0.4 | 0.4 | |
| PERCENT N2 BY VOL, DRY | | 82.1 | 82.1 | |
| MOLECULAR WT-DRY STK GAS | | 29.06 | 29.06 | |
| MOLECULAR WT-STK GAS | | 28.75 | 28.81 | |
| AVG STACK TEMPERATURE | DEG.F | 271.1 | 281.0 | |
| NET SAMPLING POINTS | | 1 | 1 | |
| STACK PRESSURE, ABSOLUTE | IN.HG | 30.36 | 30.36 | |
| AVG STACK GAS VELOCITY | FPS | 14.812 | 14.376 | 14.594 |
| STK FLOWRATE, DRY,STD CN | DSCFM | 5162. | 4972. | 5067. |
| ACTUAL STACK FLOWRATE | ACFM | 7221. | 7008. | 7115. |
| PERCENT ISOKINETIC | | 106.1 | 105.9 | 106.0 |
| PARTICULATE WT-PARTIAL | MG | 70.50 | 58.40 | 64.45 |
| PARTICULATE WT-TOTAL | MG | 100.30 | 101.80 | 101.05 |
| PERC IMPINGER CATCH | | 29.7 | 42.6 | 36.2 |
| PART. LOAD-PTL,STD CN | GR/DSCF | 0.03336 | 0.02873 | 0.03104 |
| PART. LOAD-TTL,STD CN | GR/DSCF | 0.04745 | 0.05007 | 0.04876 |
| PART. LOAD-PTL,STD CN @ 12% CO2 | | 0.13342 | 0.11491 | 0.12416 |
| PART. LOAD-TTL,STD CN @ 12% CO2 | | 0.18982 | 0.20030 | 0.19506 |
| PART. LOAD-PTL,STK CN | GR/ACF | 0.02383 | 0.02037 | 0.02210 |
| PART. LOAD-TTL,STK CN | GR/ACF | 0.03390 | 0.03551 | 0.03470 |
| PARTIC EMIS-PARTIAL | LB/HR | 1.48 | 1.22 | 1.35 |
| PARTIC EMIS-TOTAL | LB/HR | 2.10 | 2.13 | 2.12 |
| PART EMIS/WT PRD FD PTL | LB/TON | 46.99879 | 37.10072 | 42.04974 |
| part emis/wt prd fd ttl | lb/ton | 66.86502 | 64.67218 | 65.76860 |
| percent excess air | | 193.9 | 193.9 | 193.9 |

PLANT: A5MPB
LOCATION: NYC
OPERATOR: ERI

PARTICULATE SUMMARY IN ENGLISH UNITS

| DESCRIPTION | UNITS | 1 | 2 | 3 | AVERAGE |
|---|---|---|---|---|---|
| DATE OF RUN | | 03-21-73 | 03-21-73 | 03-21-73 | |
| STACK AREA | FT2 | 1.000 | 1.000 | 1.000 | |
| NET TIME OF RUN | MIN | 60.0 | 60.0 | 60.0 | |
| BAROMETRIC PRESSURE | IN.HG | 30.06 | 30.06 | 30.06 | |
| AVG ORIFICE PRES DROP | IN.H2O | 2.830 | 2.513 | 2.587 | |
| VOL DRY GAS-METER COND | DCF | 52.24 | 51.03 | 49.97 | |
| AVG GAS METER TEMP | DEG.F | 60.7 | 65.5 | 59.2 | |
| VOL DRY GAS-STD COND | DSCF | 53.78 | 52.01 | 51.57 | |
| TOTAL H2O COLLECTED | ML | 23.8 | 39.1 | 18.3 | |
| VOL H2O VAPOR-STD COND | SCF | 1.13 | 1.85 | 0.87 | |
| PERCENT MOISTURE BY VOL | | 2.1 | 3.4 | 1.7 | |
| MOLE FRACTION DRY GAS | | 0.979 | 0.966 | 0.983 | |
| PERCENT CO2 BY VOL, DRY | | 5.3 | 5.3 | 5.3 | |
| PERCENT O2 BY VOL, DRY | | 13.3 | 13.3 | 13.3 | |
| PERCENT CO BY VOL, DRY | | 0.3 | 0.3 | 0.3 | |
| PERCENT N2 BY VOL, DRY | | 81.1 | 81.1 | 81.1 | |
| MOLECULAR WT-DRY STK GAS | | 29.38 | 29.38 | 29.38 | |
| MOLECULAR WT-STK GAS | | 29.15 | 28.99 | 29.19 | |
| AVG STACK TEMPERATURE | DEG.F | 211.0 | 220.0 | 218.0 | |
| NET SAMPLING POINTS | | 1 | 1 | 1 | |
| STACK PRESSURE, ABSOLUTE | IN.HG | 30.06 | 30.06 | 30.06 | |
| AVG STACK GAS VELOCITY | FPS | 24.287 | 23.806 | 23.154 | 23.749 |
| STK FLOWRATE, DRY,STD CN | DSCFM | 1132. | 1080. | 1073. | 1095. |
| ACTUAL STACK FLOWRATE | ACFM | 1457. | 1428. | 1389. | 1425. |
| PERCENT ISOKINETIC | | 103.2 | 104.7 | 104.5 | 104.1 |
| PARTICULATE WT-PARTIAL | MG | 188.10 | 92.10 | 72.40 | 117.53 |
| PARTICULATE WT-TOTAL | MG | 222.40 | 133.80 | 105.90 | 154.03 |
| PERC IMPINGER CATCH | | 15.4 | 31.2 | 31.6 | 26.1 |
| PART. LOAD-PTL,STD CN | GR/DSCF | 0.05386 | 0.02727 | 0.02162 | 0.03425 |
| PART. LOAD-TTL,STD CN | GR/DSCF | 0.06368 | 0.03962 | 0.03163 | 0.04498 |
| PART. LOAD-PTL,STD CN @ 12% CO2 | | 0.12195 | 0.06175 | 0.04896 | 0.07755 |
| PART. LOAD-TTL,STD CN @ 12% CO2 | | 0.14419 | 0.08971 | 0.07161 | 0.10183 |
| PART. LOAD-PTL,STK CN | GR/ACF | 0.04183 | 0.02060 | 0.01669 | 0.02637 |
| PART. LOAD-TTL,STK CN | GR/ACF | 0.04946 | 0.02993 | 0.02441 | 0.03460 |
| PARTIC EMIS-PARTIAL | LB/HR | 0.52 | 0.25 | 0.20 | 0.32 |
| PARTIC EMIS-TOTAL | LB/HR | 0.62 | 0.37 | 0.29 | 0.43 |
| PART EMIS/WT PRD FD PTL | LB/$10^3$ GAL | 49.31856 | 23.81252 | 18.75703 | 30.62935 |
| PART EMIS/WT PRD FD TTL | LB/$10^3$ GAL | 58.31174 | 34.59407 | 27.43605 | 40.11394 |
| PERCENT EXCESS AIR | | 159.2 | 159.2 | 159.2 | 159.2 |

PLANT: A6BPB
LOCATION: NYC
OPERATOR: ERI

## PARTICULATE SUMMARY IN ENGLISH UNITS

| DESCRIPTION | UNITS | 1 | 2 | AVERAGE |
|---|---|---|---|---|
| DATE OF RUN | | 05-07-73 | 05-07-73 | |
| STACK AREA | FT2 | 1.000 | 1.000 | |
| NET TIME OF RUN | MIN | 60.0 | 60.0 | |
| BAROMETRIC PRESSURE | IN.HG | 30.72 | 30.72 | |
| AVG ORIFICE PRES DROP | IN.H2O | 1.180 | 1.150 | |
| VOL DRY GAS-METER COND | DCF | 34.69 | 36.61 | |
| AVG GAS METER TEMP | DEG.F | 84.4 | 86.1 | |
| VOL DRY GAS-STD COND | DSCF | 34.76 | 36.57 | |
| TOTAL H2O COLLECTED | ML | 44.7 | 34.0 | |
| VOL H2O VAPOR-STD COND | SCF | 2.12 | 1.61 | |
| PERCENT MOISTURE BY VOL | | 5.7 | 4.2 | |
| MOLE FRACTION DRY GAS | | 0.943 | 0.958 | |
| PERCENT CO2 BY VOL, DRY | | 4.8 | 4.8 | |
| PERCENT O2 BY VOL, DRY | | 12.8 | 12.8 | |
| PERCENT CO BY VOL, DRY | | 0.0 | 0.0 | |
| PERCENT N2 BY VOL, DRY | | 82.4 | 82.4 | |
| MOLECULAR WT-DRY STK GAS | | 29.28 | 29.28 | |
| MOLECULAR WT-STK GAS | | 28.63 | 28.80 | |
| AVG STACK TEMPERATURE | DEG.F | 283.0 | 283.0 | |
| NET SAMPLING POINTS | | 1 | 1 | |
| STACK PRESSURE, ABSOLUTE | IN.HG | 30.72 | 30.72 | |
| AVG STACK GAS VELOCITY | FPS | 39.686 | 37.613 | 38.650 |
| STK FLOWRATE, DRY,STD CN | DSCFM | 1643. | 1583. | 1613. |
| ACTUAL STACK FLOWRATE | ACFM | 2381. | 2257. | 2319. |
| PERCENT ISOKINETIC | | 103.4 | 113.0 | 108.2 |
| PARTICULATE WT-PARTIAL | MG | 52.70 | 70.40 | 61.55 |
| PARTICULATE WT-TOTAL | MG | 95.60 | 145.30 | 120.45 |
| PERC IMPINGER CATCH | | 44.9 | 51.5 | 48.2 |
| PART. LOAD-PTL,STD CN | GR/DSCF | 0.02335 | 0.02965 | 0.02650 |
| PART. LOAD-TTL,STD CN | GR/DSCF | 0.04235 | 0.06119 | 0.05177 |
| PART. LOAD-PTL,STD CN @ 12% CO2 | | 0.05837 | 0.07411 | 0.06624 |
| PART. LOAD-TTL,STD CN @ 12% CO2 | | 0.10588 | 0.15297 | 0.12942 |
| PART. LOAD-PTL,STK CN | GR/ACF | 0.01610 | 0.02078 | 0.01844 |
| PART. LOAD-TTL,STK CN | GR/ACF | 0.02921 | 0.04289 | 0.03605 |
| PARTIC EMIS-PARTIAL | LB/HR | 0.33 | 0.40 | 0.37 |
| PARTIC EMIS-TOTAL | LB/HR | 0.60 | 0.83 | 0.71 |
| PART EMIS/WT PRD FD PTL | LB/TON | 11.74580 | 14.36385 | 13.05482 |
| PART EMIS/WT PRD FD TTL | LB/TON | 21.30736 | 29.64583 | 25.47659 |
| PERCENT EXCESS AIR | | 143.0 | 143.0 | 143.0 |

PLANT: A7MPB
LOCATION: NYC
OPERATOR: ERI

## PARTICULATE SUMMARY IN ENGLISH UNITS

| DESCRIPTION | UNITS | 1 | 2 | AVERAGE |
|---|---|---|---|---|
| DATE OF RUN | | 04-13-73 | 04-13-73 | |
| STACK AREA | FT2 | 1.000 | 1.000 | |
| NET TIME OF RUN | MIN | 60.0 | 60.0 | |
| BAROMETRIC PRESSURE | IN.HG | 29.98 | 29.98 | |
| AVG ORIFICE PRES DROP | IN.H2O | 0.950 | 1.240 | |
| VOL DRY GAS-METER COND | DCF | 33.96 | 32.70 | |
| AVG GAS METER TEMP | DEG.F | 85.0 | 86.7 | |
| VOL DRY GAS-STD COND | DSCF | 33.16 | 31.85 | |
| TOTAL H2O COLLECTED | ML | 40.0 | 42.0 | |
| VOL H2O VAPOR-STD COND | SCF | 1.90 | 1.99 | |
| PERCENT MOISTURE BY VOL | | 5.4 | 5.9 | |
| MOLE FRACTION DRY GAS | | 0.946 | 0.941 | |
| PERCENT CO2 BY VOL, DRY | | 6.0 | 6.0 | |
| PERCENT O2 BY VOL, DRY | | 12.9 | 12.9 | |
| PERCENT CO BY VOL, DRY | | 0.1 | 0.1 | |
| PERCENT N2 BY VOL, DRY | | 81.0 | 81.0 | |
| MOLECULAR WT-DRY STK GAS | | 29.48 | 29.48 | |
| MOLECULAR WT-STK GAS | | 28.86 | 28.80 | |
| AVG STACK TEMPERATURE | DEG.F | 232.0 | 234.0 | |
| NET SAMPLING POINTS | | 1 | 1 | |
| STACK PRESSURE, ABSOLUTE | IN.HG | 29.98 | 29.98 | |
| AVG STACK GAS VELOCITY | FPS | 34.753 | 38.645 | 36.699 |
| STK FLOWRATE, DRY,STD CN | DSCFM | 1513. | 1670. | 1591. |
| ACTUAL STACK FLOWRATE | ACFM | 2085. | 2319. | 2202. |
| PERCENT ISOKINETIC | | 107.2 | 93.3 | 100.2 |
| PARTICULATE WT-PARTIAL | MG | 44.70 | 43.90 | 44.30 |
| PARTICULATE WT-TOTAL | MG | 89.50 | 89.10 | 89.30 |
| PERC IMPINGER CATCH | | 50.1 | 50.7 | 50.4 |
| PART. LOAD-PTL,STD CN | GR/DSCF | 0.02076 | 0.02123 | 0.02099 |
| PART. LOAD-TTL,STD CN | GR/DSCF | 0.04156 | 0.04308 | 0.04232 |
| PART. LOAD-PTL,STD CN @ 12% CO2 | | 0.04151 | 0.04246 | 0.04199 |
| PART. LOAD-TTL,STD CN @ 12% CO2 | | 0.08312 | 0.08617 | 0.08465 |
| PART. LOAD-PTL,STK CN | GR/ACF | 0.01506 | 0.01528 | 0.01517 |
| PART. LOAD-TTL,STK CN | GR/ACF | 0.03015 | 0.03100 | 0.03058 |
| PARTIC EMIS-PARTIAL | LB/HR | 0.27 | 0.30 | 0.29 |
| PARTIC EMIS-TOTAL | LB/HR | 0.54 | 0.62 | 0.58 |
| PART EMIS/WT PRD FD PTL | LB/TON | 8.82804 | 9.96019 | 9.39411 |
| PART EMIS/WT PRD FD TTL | LB/TON | 17.67583 | 20.21533 | 18.94557 |
| PERCENT EXCESS AIR | | 150.6 | 150.6 | 150.6 |

PLANT: A8MPB
LOCATION: NYC
OPERATOR: ERI

## PARTICULATE SUMMARY IN ENGLISH UNITS

| DESCRIPTION | UNITS | 1 | 2 | AVERAGE |
|---|---|---|---|---|
| DATE OF RUN | | 04-30-73 | 04-30-73 | |
| STACK AREA | FT2 | 1.000 | 1.000 | |
| NET TIME OF RUN | MIN | 64.0 | 64.0 | |
| BAROMETRIC PRESSURE | IN.HG | 30.50 | 30.50 | |
| AVG ORIFICE PRES DROP | IN.H2O | 0.933 | 0.982 | |
| VOL DRY GAS-METER COND | DCF | 34.67 | 33.60 | |
| AVG GAS METER TEMP | DEG.F | 87.0 | 87.4 | |
| VOL DRY GAS-STD COND | DSCF | 34.31 | 33.24 | |
| TOTAL H2O COLLECTED | ML | 31.6 | 34.4 | |
| VOL H2O VAPOR-STD COND | SCF | 1.50 | 1.63 | |
| PERCENT MOISTURE BY VOL | | 4.2 | 4.7 | |
| MOLE FRACTION DRY GAS | | 0.958 | 0.953 | |
| PERCENT CO2 BY VOL, DRY | | 5.7 | 5.8 | |
| PERCENT O2 BY VOL, DRY | | 12.7 | 12.5 | |
| PERCENT CO BY VOL, DRY | | 0.0 | 0.0 | |
| PERCENT N2 BY VOL, DRY | | 81.6 | 81.7 | |
| MOLECULAR WT-DRY STK GAS | | 29.42 | 29.43 | |
| MOLECULAR WT-STK GAS | | 28.94 | 28.89 | |
| AVG STACK TEMPERATURE | DEG.F | 269.0 | 269.0 | |
| NET SAMPLING POINTS | | 1 | 1 | |
| STACK PRESSURE, ABSOLUTE | IN.HG | 30.50 | 30.50 | |
| AVG STACK GAS VELOCITY | FPS | 34.357 | 34.038 | 34.197 |
| STK FLOWRATE, DRY,STD CN | DSCFM | 1464. | 1442. | 1453. |
| ACTUAL STACK FLOWRATE | ACFM | 2061. | 2042. | 2052. |
| PERCENT ISOKINETIC | | 107.5 | 105.6 | 106.6 |
| PARTICULATE WT-PARTIAL | MG | 178.80 | 55.20 | 117.00 |
| PARTICULATE WT-TOTAL | MG | 216.90 | 114.30 | 165.60 |
| PERC IMPINGER CATCH | | 17.6 | 51.7 | 34.6 |
| PART. LOAD-PTL,STD CN | GR/DSCF | 0.08026 | 0.02557 | 0.05291 |
| PART. LOAD-TTL,STD CN | GR/DSCF | 0.09736 | 0.05295 | 0.07516 |
| PART. LOAD-PTL,STD CN @ 12% CO2 | | 0.16896 | 0.05291 | 0.11094 |
| PART. LOAD-TTL,STD CN @ 12% CO2 | | 0.20496 | 0.10956 | 0.15726 |
| PART. LOAD-PTL,STK CN | GR/ACF | 0.05695 | 0.01805 | 0.03750 |
| PART. LOAD-TTL,STK CN | GR/ACF | 0.06908 | 0.03738 | 0.05323 |
| PARTIC EMIS-PARTIAL | LB/HR | 1.01 | 0.32 | 0.66 |
| PARTIC EMIS-TOTAL | LB/HR | 1.22 | 0.65 | 0.94 |
| PART EMIS/WT PRD FD PTL | LB/TON | 17.91402 | 5.62628 | 11.77015 |
| PART EMIS/WT PRD FD TTL | LB/TON | 21.73126 | 11.65006 | 16.69066 |
| PERCENT EXCESS AIR | | 143.6 | 137.8 | 140.7 |

PLANT: A9MPB
LOCATION: NYC
OPERATOR: ERI

## PARTICULATE SUMMARY IN ENGLISH UNITS

| DESCRIPTION | UNITS | 1 | 2 | AVERAGE |
|---|---|---|---|---|
| DATE OF RUN | | 05-01-73 | 05-01-73 | |
| STACK AREA | FT2 | 1.000 | 1.000 | |
| NET TIME OF RUN | MIN | 60.0 | 60.0 | |
| BAROMETRIC PRESSURE | IN.HG | 30.68 | 30.68 | |
| AVG ORIFICE PRES DROP | IN.H2O | 3.460 | 3.322 | |
| VOL DRY GAS-METER COND | DCF | 60.36 | 58.01 | |
| AVG GAS METER TEMP | DEG.F | 95.9 | 102.6 | |
| VOL DRY GAS-STD COND | DSCF | 59.49 | 56.48 | |
| TOTAL H2O COLLECTED | ML | 52.7 | 59.7 | |
| VOL H2O VAPOR-STD COND | SCF | 2.50 | 2.83 | |
| PERCENT MOISTURE BY VOL | | 4.0 | 4.8 | |
| MOLE FRACTION DRY GAS | | 0.960 | 0.952 | |
| PERCENT CO2 BY VOL, DRY | | 4.6 | 4.5 | |
| PERCENT O2 BY VOL, DRY | | 14.5 | 14.5 | |
| PERCENT CO BY VOL, DRY | | 0.1 | 0.2 | |
| PERCENT N2 BY VOL, DRY | | 80.8 | 80.8 | |
| MOLECULAR WT-DRY STK GAS | | 29.32 | 29.30 | |
| MOLECULAR WT-STK GAS | | 28.86 | 28.76 | |
| AVG STACK TEMPERATURE | DEG.F | 240.0 | 240.0 | |
| NET SAMPLING POINTS | | 1 | 1 | |
| STACK PRESSURE, ABSOLUTE | IN.HG | 30.68 | 30.68 | |
| AVG STACK GAS VELOCITY | FPS | 29.958 | 27.006 | 28.482 |
| STK FLOWRATE, DRY,STD CN | DSCFM | 1339. | 1198. | 1268. |
| ACTUAL STACK FLOWRATE | ACFM | 1797. | 1620. | 1709. |
| PERCENT ISOKINETIC | | 96.6 | 102.5 | 99.5 |
| PARTICULATE WT-PARTIAL | MG | 35.50 | 119.60 | 77.55 |
| PARTICULATE WT-TOTAL | MG | 79.90 | 180.20 | 130.05 |
| PERC IMPINGER CATCH | | 55.6 | 33.6 | 44.6 |
| PART. LOAD-PTL,STD CN | GR/DSCF | 0.00919 | 0.03261 | 0.02090 |
| PART. LOAD-TTL,STD CN | GR/DSCF | 0.02068 | 0.04914 | 0.03491 |
| PART. LOAD-PTL,STD CN @ 12% CO2 | | 0.02397 | 0.08697 | 0.05547 |
| PART. LOAD-TTL,STD CN @ 12% CO2 | | 0.05396 | 0.13103 | 0.09250 |
| PART. LOAD-PTL,STK CN | GR/ACF | 0.00684 | 0.02409 | 0.01547 |
| PART. LOAD-TTL,STK CN | GR/ACF | 0.01540 | 0.03630 | 0.02585 |
| PARTIC EMIS-PARTIAL | LB/HR | 0.11 | 0.33 | 0.22 |
| PARTIC EMIS-TOTAL | LB/HR | 0.24 | 0.50 | 0.37 |
| PART EMIS/WT PRD FD PTL | LB/TON | 2.13087 | 6.76379 | 4.44733 |
| PART EMIS/WT PRD FD TTL | LB/TON | 4.79596 | 10.19092 | 7.49344 |
| PERCENT EXCESS AIR | | 210.0 | 207.8 | 208.9 |

PLANT: A10BHB
LOCATION: NYC
OPERATOR: ERI

## PARTICULATE SUMMARY IN ENGLISH UNITS

| DESCRIPTION | UNITS | 1 | 2 | AVERAGE |
|---|---|---|---|---|
| DATE OF RUN | | 06-26-73 | 06-26-73 | |
| STACK AREA | FT2 | 28.400 | 28.400 | |
| NET TIME OF RUN | MIN | 64.0 | 62.0 | |
| BAROMETRIC PRESSURE | IN.HG | 30.27 | 30.28 | |
| AVG ORIFICE PRES DROP | IN.H2O | 4.040 | 3.900 | |
| VOL DRY GAS-METER COND | DCF | 65.06 | 61.90 | |
| AVG GAS METER TEMP | DEG.F | 106.4 | 96.7 | |
| VOL DRY GAS-STD COND | DSCF | 62.19 | 60.19 | |
| TOTAL H2O COLLECTED | ML | 49.1 | 47.2 | |
| VOL H2O VAPOR-STD COND | SCF | 2.33 | 2.24 | |
| PERCENT MOISTURE BY VOL | | 3.6 | 3.6 | |
| MOLE FRACTION DRY GAS | | 0.964 | 0.964 | |
| PERCENT CO2 BY VOL, DRY | | 1.1 | 1.1 | |
| PERCENT O2 BY VOL, DRY | | 19.6 | 19.6 | |
| PERCENT CO BY VOL, DRY | | 0.0 | 0.0 | |
| PERCENT N2 BY VOL, DRY | | 79.3 | 79.3 | |
| MOLECULAR WT-DRY STK GAS | | 28.96 | 28.96 | |
| MOLECULAR WT-STK GAS | | 28.56 | 28.57 | |
| AVG STACK TEMPERATURE | DEG.F | 162.0 | 162.0 | |
| NET SAMPLING POINTS | | 1 | 1 | |
| STACK PRESSURE, ABSOLUTE | IN.HG | 30.27 | 30.28 | |
| AVG STACK GAS VELOCITY | FPS | 6.320 | 6.191 | 6.256 |
| STK FLOWRATE, DRY,STD CN | DSCFM | 8949. | 8769. | 8859. |
| ACTUAL STACK FLOWRATE | ACFM | 10770. | 10549. | 10659. |
| PERCENT ISOKINETIC | | 100.5 | 102.5 | 101.5 |
| PARTICULATE WT-PARTIAL | MG | 115.40 | 19.90 | 67.65 |
| PARTICULATE WT-TOTAL | MG | 135.00 | 43.10 | 89.05 |
| PERC IMPINGER CATCH | | 14.5 | 53.8 | 34.2 |
| PART. LOAD-PTL,STD CN | GR/DSCF | 0.02858 | 0.00509 | 0.01683 |
| PART. LOAD-TTL,STD CN | GR/DSCF | 0.03343 | 0.01103 | 0.02223 |
| PART. LOAD-PTL,STD CN @ 12% CO2 | | 0.31173 | 0.05554 | 0.18364 |
| PART. LOAD-TTL,STD CN @ 12% CO2 | | 0.36468 | 0.12030 | 0.24249 |
| PART. LOAD-PTL,STK CN | GR/ACF | 0.02373 | 0.00423 | 0.01398 |
| PART. LOAD-TTL,STK CN | GR/ACF | 0.02776 | 0.00916 | 0.01846 |
| PARTIC EMIS-PARTIAL | LB/HR | 2.19 | 0.38 | 1.29 |
| PARTIC EMIS-TOTAL | LB/HR | 2.56 | 0.83 | 1.70 |
| PART EMIS/WT PRD FD PTL | LB/TON | 28.99211 | 5.06206 | 17.02708 |
| PART EMIS/WT PRD FD TTL | LB/TON | 33.91624 | 10.96357 | 22.43990 |
| PERCENT EXCESS AIR | | 1468.0 | 1468.0 | 1468.0 |

PLANT: A10BHB(SOOT)
LOCATION: NYC
OPERATOR: ERI

## PARTICULATE SUMMARY IN ENGLISH UNITS

| DESCRIPTION | UNITS | 3 | 4 | AVERAGE |
|---|---|---|---|---|
| DATE OF RUN | | 06-26-73 | 06-26-73 | |
| STACK AREA | FT2 | 28.400 | 28.400 | |
| NET TIME OF RUN | MIN | 40.0 | 40.0 | |
| BAROMETRIC PRESSURE | IN.HG | 30.27 | 30.28 | |
| AVG ORIFICE PRES DROP | IN.H2O | 3.790 | 3.443 | |
| VOL DRY GAS-METER COND | DCF | 38.47 | 36.62 | |
| AVG GAS METER TEMP | DEG.F | 112.3 | 102.3 | |
| VOL DRY GAS-STD COND | DSCF | 36.38 | 35.21 | |
| TOTAL H2O COLLECTED | ML | 27.7 | 36.9 | |
| VOL H2O VAPOR-STD COND | SCF | 1.31 | 1.75 | |
| PERCENT MOISTURE BY VOL | | 3.5 | 4.7 | |
| MOLE FRACTION DRY GAS | | 0.965 | 0.953 | |
| PERCENT CO2 BY VOL, DRY | | 2.2 | 2.2 | |
| PERCENT O2 BY VOL, DRY | | 18.2 | 18.2 | |
| PERCENT CO BY VOL, DRY | | 0.0 | 0.0 | |
| PERCENT N2 BY VOL, DRY | | 79.6 | 79.6 | |
| MOLECULAR WT-DRY STK GAS | | 29.08 | 29.08 | |
| MOLECULAR WT-STK GAS | | 28.69 | 28.56 | |
| AVG STACK TEMPERATURE | DEG.F | 165.0 | 174.0 | |
| NET SAMPLING POINTS | | 1 | 1 | |
| STACK PRESSURE, ABSOLUTE | IN.HG | 30.27 | 30.28 | |
| AVG STACK GAS VELOCITY | FPS | 6.109 | 5.747 | 5.928 |
| STK FLOWRATE, DRY,STD CN | DSCFM | 8619. | 7892. | 8255. |
| ACTUAL STACK FLOWRATE | ACFM | 10409. | 9794. | 10101. |
| PERCENT ISOKINETIC | | 97.7 | 103.3 | 100.5 |
| PARTICULATE WT-PARTIAL | MG | 18.90 | 23.40 | 21.15 |
| PARTICULATE WT-TOTAL | MG | 37.30 | 48.70 | 43.00 |
| PERC IMPINGER CATCH | | 49.3 | 52.0 | 50.6 |
| PART. LOAD-PTL,STD CN | GR/DSCF | 0.00800 | 0.01023 | 0.00912 |
| PART. LOAD-TTL,STD CN | GR/DSCF | 0.01579 | 0.02130 | 0.01855 |
| PART. LOAD-PTL,STD CN @ 12% CO2 | | 0.04365 | 0.05582 | 0.04973 |
| PART. LOAD-TTL,STD CN @ 12% CO2 | | 0.08614 | 0.11618 | 0.10116 |
| PART. LOAD-PTL,STK CN | GR/ACF | 0.00662 | 0.00824 | 0.00743 |
| PART. LOAD-TTL,STK CN | GR/ACF | 0.01307 | 0.01715 | 0.01511 |
| PARTIC EMIS-PARTIAL | LB/HR | 0.59 | 0.69 | 0.64 |
| PARTIC EMIS-TOTAL | LB/HR | 1.17 | 1.44 | 1.30 |
| PART EMIS/WT PRD FD PTL | LB/TON | 8.39653 | 9.83372 | 9.11512 |
| PART EMIS/WT PRD FD TTL | LB/TON | 16.57092 | 20.46591 | 18.51842 |
| PERCENT EXCESS AIR | | 646.7 | 646.7 | 646.7 |

PLANT: B1MPB
LOCATION: NYC
OPERATOR: ERI

## PARTICULATE SUMMARY IN ENGLISH UNITS

| DESCRIPTION | UNITS | 1 | 2 | AVERAGE |
|---|---|---|---|---|
| DATE OF RUN | | 04-11-73 | 04-11-73 | |
| STACK AREA | FT2 | 3.140 | 3.140 | |
| NET TIME OF RUN | MIN | 60.0 | 60.0 | |
| BAROMETRIC PRESSURE | IN.HG | 29.68 | 29.68 | |
| AVG ORIFICE PRES DROP | IN.H2O | 1.912 | 1.776 | |
| VOL DRY GAS-METER COND | DCF | 43.22 | 42.09 | |
| AVG GAS METER TEMP | DEG.F | 85.8 | 89.8 | |
| VOL DRY GAS-STD COND | DSCF | 41.82 | 40.42 | |
| TOTAL H2O COLLECTED | ML | 25.1 | 24.4 | |
| VOL H2O VAPOR-STD COND | SCF | 1.19 | 1.15 | |
| PERCENT MOISTURE BY VOL | | 2.8 | 2.8 | |
| MOLE FRACTION DRY GAS | | 0.972 | 0.972 | |
| PERCENT CO2 BY VOL, DRY | | 3.7 | 3.7 | |
| PERCENT O2 BY VOL, DRY | | 19.0 | 19.0 | |
| PERCENT CO BY VOL, DRY | | 0.2 | 0.2 | |
| PERCENT N2 BY VOL, DRY | | 77.1 | 77.1 | |
| MOLECULAR WT-DRY STK GAS | | 29.35 | 29.35 | |
| MOLECULAR WT-STK GAS | | 29.04 | 29.04 | |
| AVG STACK TEMPERATURE | DEG.F | 320.8 | 320.8 | |
| NET SAMPLING POINTS | | 1 | 1 | |
| STACK PRESSURE, ABSOLUTE | IN.HG | 29.68 | 29.68 | |
| AVG STACK GAS VELOCITY | FPS | 13.031 | 13.955 | 13.493 |
| STK FLOWRATE, DRY,STD CN | DSCFM | 1607. | 1721. | 1664. |
| ACTUAL STACK FLOWRATE | ACFM | 2455. | 2629. | 2542. |
| PERCENT ISOKINETIC | | 99.9 | 90.2 | 95.0 |
| PARTICULATE WT-PARTIAL | MG | 85.50 | 73.10 | 79.30 |
| PARTICULATE WT-TOTAL | MG | 120.80 | 117.70 | 119.25 |
| PERC IMPINGER CATCH | | 29.2 | 37.9 | 33.6 |
| PART. LOAD-PTL,STD CN | GR/DSCF | 0.03148 | 0.02785 | 0.02967 |
| PART. LOAD-TTL,STD CN | GR/DSCF | 0.04448 | 0.04484 | 0.04466 |
| PART. LOAD-PTL,STD CN @ 12% CO2 | | 0.10211 | 0.09032 | 0.09621 |
| PART. LOAD-TTL,STD CN @ 12% CO2 | | 0.14426 | 0.14543 | 0.14484 |
| PART. LOAD-PTL,STK CN | GR/ACF | 0.02060 | 0.01822 | 0.01941 |
| PART. LOAD-TTL,STK CN | GR/ACF | 0.02910 | 0.02933 | 0.02921 |
| PARTIC EMIS-PARTIAL | LB/HR | 0.43 | 0.41 | 0.42 |
| PARTIC EMIS-TOTAL | LB/HR | 0.61 | 0.66 | 0.64 |
| PART EMIS/WT PRD FD PTL | LB/TON | 17.00514 | 16.10760 | 16.55637 |
| PART EMIS/WT PRD FD TTL | LB/TON | 24.02597 | 25.93523 | 24.98059 |
| PERCENT EXCESS AIR | | 1299.5 | 1299.5 | 1299.5 |

PLANT: [redacted]
LOCATION: NTC
OPERATOR: ERI

## PARTICULATE SUMMARY IN ENGLISH UNITS

| DESCRIPTION | UNITS | 1 | 2 | AVERAGE |
|---|---|---|---|---|
| DATE OF RUN | | 04-10-73 | 04-10-73 | |
| STACK AREA | FT2 | 1.000 | 1.000 | |
| NET TIME OF RUN | MIN | 60.0 | 60.0 | |
| BAROMETRIC PRESSURE | IN.HG | 29.42 | 29.42 | |
| AVG ORIFICE PRES DROP | IN.H2O | 0.978 | 0.848 | |
| VOL DRY GAS-METER COND | DCF | 32.87 | 32.25 | |
| AVG GAS METER TEMP | DEG.F | 79.5 | 87.1 | |
| VOL DRY GAS-STD COND | DSCF | 31.82 | 30.78 | |
| TOTAL H2O COLLECTED | ML | 45.2 | 42.2 | |
| VOL H2O VAPOR-STD COND | SCF | 2.14 | 2.00 | |
| PERCENT MOISTURE BY VOL | | 6.3 | 6.1 | |
| MOLE FRACTION DRY GAS | | 0.937 | 0.939 | |
| PERCENT CO2 BY VOL, DRY | | 3.4 | 3.4 | |
| PERCENT O2 BY VOL, DRY | | 14.1 | 14.1 | |
| PERCENT CO BY VOL, DRY | | 0.0 | 0.0 | |
| PERCENT N2 BY VOL, DRY | | 82.5 | 82.5 | |
| MOLECULAR WT-DRY STK GAS | | 29.11 | 29.11 | |
| MOLECULAR WT-STK GAS | | 28.41 | 28.43 | |
| AVG STACK TEMPERATURE | DEG.F | 234.0 | 234.0 | |
| NET SAMPLING POINTS | | 1 | 1 | |
| STACK PRESSURE, ABSOLUTE | IN.HG | 29.42 | 29.42 | |
| AVG STACK GAS VELOCITY | FPS | 39.399 | 34.934 | 37.166 |
| STK FLOWRATE, DRY,STD CN | DSCFM | 1663. | 1478. | 1570. |
| ACTUAL STACK FLOWRATE | ACFM | 2364. | 2096. | 2230. |
| PERCENT ISOKINETIC | | 93.6 | 101.8 | 97.7 |
| PARTICULATE WT-PARTIAL | MG | 37.00 | 72.90 | 54.95 |
| PARTICULATE WT-TOTAL | MG | 77.20 | 120.60 | 98.90 |
| PERC IMPINGER CATCH | | 52.1 | 39.6 | 45.8 |
| PART. LOAD-PTL,STD CN | GR/DSCF | 0.01791 | 0.03648 | 0.02719 |
| PART. LOAD-TTL,STD CN | GR/DSCF | 0.03736 | 0.06034 | 0.04885 |
| PART. LOAD-PTL,STD CN @ 12% CO2 | | 0.06320 | 0.12874 | 0.09597 |
| PART. LOAD-TTL,STD CN @ 12% CO2 | | 0.13186 | 0.21298 | 0.17242 |
| PART. LOAD-PTL,STK CN | GR/ACF | 0.01259 | 0.02570 | 0.01914 |
| PART. LOAD-TTL,STK CN | GR/ACF | 0.02626 | 0.04252 | 0.03439 |
| PARTIC EMIS-PARTIAL | LB/HR | 0.26 | 0.46 | 0.36 |
| PARTIC EMIS-TOTAL | LB/HR | 0.53 | 0.76 | 0.65 |
| PART EMIS/WT PRD FD PTL | LB/TON | 15.10094 | 27.33606 | 21.21849 |
| PART EMIS/WT PRD FD TTL | LB/TON | 31.50787 | 45.22263 | 38.36525 |
| PERCENT EXCESS AIR | | 183.6 | 183.6 | 183.6 |

PLANT: B36PB
LOCATION: NYC
OPERATOR: ERI

## PARTICULATE SUMMARY IN ENGLISH UNITS

| DESCRIPTION | UNITS | 1 | 2 | AVERAGE |
|---|---|---|---|---|
| DATE OF RUN | | 04-06-73 | 04-06-73 | |
| STACK AREA | FT2 | 1.000 | 1.000 | |
| NET TIME OF RUN | MIN | 60.0 | 60.0 | |
| BAROMETRIC PRESSURE | IN.HG | 29.93 | 29.93 | |
| AVG ORIFICE PRES DROP | IN.H2O | 0.530 | 0.674 | |
| VOL DRY GAS-METER COND | DCF | 23.38 | 29.02 | |
| AVG GAS METER TEMP | DEG.F | 67.1 | 70.1 | |
| VOL DRY GAS-STD COND | DSCF | 23.54 | 29.07 | |
| TOTAL H2O COLLECTED | ML | 35.0 | 37.0 | |
| VOL H2O VAPOR-STD COND | SCF | 1.66 | 1.75 | |
| PERCENT MOISTURE BY VOL | | 6.6 | 5.7 | |
| MOLE FRACTION DRY GAS | | 0.934 | 0.943 | |
| PERCENT CO2 BY VOL, DRY | | 5.0 | 5.0 | |
| PERCENT O2 BY VOL, DRY | | 13.2 | 13.2 | |
| PERCENT CO BY VOL, DRY | | 0.0 | 0.0 | |
| PERCENT N2 BY VOL, DRY | | 81.8 | 81.8 | |
| MOLECULAR WT-DRY STK GAS | | 29.33 | 29.33 | |
| MOLECULAR WT-STK GAS | | 28.58 | 28.68 | |
| AVG STACK TEMPERATURE | DEG.F | 228.0 | 228.0 | |
| NET SAMPLING POINTS | | 1 | 1 | |
| STACK PRESSURE, ABSOLUTE | IN.HG | 29.93 | 29.93 | |
| AVG STACK GAS VELOCITY | FPS | 25.127 | 29.078 | 27.103 |
| STK FLOWRATE, DRY,STD CN | DSCFM | 1085. | 1268. | 1176. |
| ACTUAL STACK FLOWRATE | ACFM | 1508. | 1745. | 1626. |
| PERCENT ISOKINETIC | | 106.1 | 112.1 | 109.1 |
| PARTICULATE WT-PARTIAL | MG | 36.00 | 38.50 | 37.25 |
| PARTICULATE WT-TOTAL | MG | 68.50 | 61.80 | 65.15 |
| PERC IMPINGER CATCH | | 47.4 | 37.7 | 42.6 |
| PART. LOAD-PTL,STD CN | GR/DSCF | 0.02355 | 0.02040 | 0.02197 |
| PART. LOAD-TTL,STD CN | GR/DSCF | 0.04481 | 0.03274 | 0.03878 |
| PART. LOAD-PTL,STD CN @ 12% CO2 | | 0.05652 | 0.04895 | 0.05274 |
| PART. LOAD-TTL,STD CN @ 12% CO2 | | 0.10754 | 0.07858 | 0.09306 |
| PART. LOAD-PTL,STK CN | GR/ACF | 0.01694 | 0.01481 | 0.01588 |
| PART. LOAD-TTL,STK CN | GR/ACF | 0.03223 | 0.02378 | 0.02800 |
| PARTIC EMIS-PARTIAL | LB/HR | 0.22 | 0.22 | 0.22 |
| PARTIC EMIS-TOTAL | LB/HR | 0.42 | 0.36 | 0.39 |
| PART EMIS/WT PRD FD PTL | LB/TON | 11.64993 | 11.78939 | 11.71966 |
| PART EMIS/WT PRD FD TTL | LB/TON | 22.16721 | 18.92427 | 20.54573 |
| PERCENT EXCESS AIR | | 157.2 | 157.2 | 157.2 |

PLANT: B4MPB
LOCATION: NYC
OPERATOR: ERI

## PARTICULATE SUMMARY IN ENGLISH UNITS

| DESCRIPTION | UNITS | 1 | 2 | AVERAGE |
|---|---|---|---|---|
| DATE OF RUN | | 04-03-73 | 04-03-73 | |
| STACK AREA | FT2 | 1.000 | 1.000 | |
| NET TIME OF RUN | MIN | 60.0 | 60.0 | |
| BAROMETRIC PRESSURE | IN.HG | 29.70 | 29.70 | |
| AVG ORIFICE PRES DROP | IN.H2O | 5.086 | 4.779 | |
| VOL DRY GAS-METER COND | DCF | 72.70 | 66.04 | |
| AVG GAS METER TEMP | DEG.F | 93.3 | 93.5 | |
| VOL DRY GAS-STD COND | DSCF | 69.98 | 63.50 | |
| TOTAL H2O COLLECTED | ML | 73.0 | 85.0 | |
| VOL H2O VAPOR-STD COND | SCF | 3.46 | 4.03 | |
| PERCENT MOISTURE BY VOL | | 4.7 | 6.0 | |
| MOLE FRACTION DRY GAS | | 0.953 | 0.940 | |
| PERCENT CO2 BY VOL, DRY | | 5.6 | 5.6 | |
| PERCENT O2 BY VOL, DRY | | 13.1 | 13.1 | |
| PERCENT CO BY VOL, DRY | | 0.1 | 0.1 | |
| PERCENT N2 BY VOL, DRY | | 81.2 | 81.2 | |
| MOLECULAR WT-DRY STK GAS | | 29.42 | 29.42 | |
| MOLECULAR WT-STK GAS | | 28.88 | 28.74 | |
| AVG STACK TEMPERATURE | DEG.F | 304.0 | 301.0 | |
| NET SAMPLING POINTS | | 1 | 1 | |
| STACK PRESSURE, ABSOLUTE | IN.HG | 29.70 | 29.70 | |
| AVG STACK GAS VELOCITY | FPS | 37.703 | 35.405 | 36.554 |
| STK FLOWRATE, DRY,STD CN | DSCFM | 1484. | 1381. | 1432. |
| ACTUAL STACK FLOWRATE | ACFM | 2262. | 2124. | 2193. |
| PERCENT ISOKINETIC | | 102.5 | 99.9 | 101.2 |
| PARTICULATE WT-PARTIAL | MG | 71.50 | 96.60 | 84.05 |
| PARTICULATE WT-TOTAL | MG | 109.80 | 128.40 | 119.10 |
| PERC IMPINGER CATCH | | 34.9 | 24.8 | 29.8 |
| PART. LOAD-PTL,STD CN | GR/DSCF | 0.01573 | 0.02343 | 0.01958 |
| PART. LOAD-TTL,STD CN | GR/DSCF | 0.02416 | 0.03114 | 0.02765 |
| PART. LOAD-PTL,STD CN @ 12% CO2 | | 0.03372 | 0.05020 | 0.04196 |
| PART. LOAD-TTL,STD CN @ 12% CO2 | | 0.05178 | 0.06673 | 0.05925 |
| PART. LOAD-PTL,STK CN | GR/ACF | 0.01032 | 0.01522 | 0.01277 |
| PART. LOAD-TTL,STK CN | GR/ACF | 0.01584 | 0.02023 | 0.01804 |
| PARTIC EMIS-PARTIAL | LB/HR | 0.20 | 0.28 | 0.24 |
| PARTIC EMIS-TOTAL | LB/HR | 0.31 | 0.37 | 0.34 |
| PART EMIS/WT PRD FD PTL | LB/$10^3$ GAL | 6.99820 | 9.69434 | 8.34627 |
| PART EMIS/WT PRD FD TTL | LB/$10^3$ GAL | 10.74688 | 12.88564 | 11.81626 |
| PERCENT EXCESS AIR | | 155.6 | 155.6 | 155.6 |

PLANT: B4MPB
LOCATION: NYC
OPERATOR: ERI

## PARTICULATE SUMMARY IN ENGLISH UNITS

| DESCRIPTION | UNITS | 1 | 2 | AVERAGE |
|---|---|---|---|---|
| DATE OF RUN | | 04-03-73 | 04-03-73 | |
| STACK AREA | FT2 | 1.000 | 1.000 | |
| NET TIME OF RUN | MIN | 60.0 | 60.0 | |
| BAROMETRIC PRESSURE | IN.HG | 29.70 | 29.70 | |
| AVG ORIFICE PRES DROP | IN.H2O | 5.086 | 4.779 | |
| VOL DRY GAS-METER COND | DCF | 72.70 | 66.04 | |
| AVG GAS METER TEMP | DEG.F | 93.3 | 93.5 | |
| VOL DRY GAS-STD COND | DSCF | 69.98 | 63.50 | |
| TOTAL H2O COLLECTED | ML | 73.0 | 85.0 | |
| VOL H2O VAPOR-STD COND | SCF | 3.46 | 4.03 | |
| PERCENT MOISTURE BY VOL | | 4.7 | 6.0 | |
| MOLE FRACTION DRY GAS | | 0.953 | 0.940 | |
| PERCENT CO2 BY VOL, DRY | | 5.6 | 5.6 | |
| PERCENT O2 BY VOL, DRY | | 13.1 | 13.1 | |
| PERCENT CO BY VOL, DRY | | 0.1 | 0.1 | |
| PERCENT N2 BY VOL, DRY | | 81.2 | 81.2 | |
| MOLECULAR WT-DRY STK GAS | | 29.42 | 29.42 | |
| MOLECULAR WT-STK GAS | | 28.88 | 28.74 | |
| AVG STACK TEMPERATURE | DEG.F | 304.0 | 301.0 | |
| NET SAMPLING POINTS | | 1 | 1 | |
| STACK PRESSURE, ABSOLUTE | IN.HG | 29.70 | 29.70 | |
| AVG STACK GAS VELOCITY | FPS | 37.703 | 35.405 | 36.554 |
| STK FLOWRATE, DRY,STD CN | DSCFM | 1484. | 1381. | 1432. |
| ACTUAL STACK FLOWRATE | ACFM | 2262. | 2124. | 2193. |
| PERCENT ISOKINETIC | | 102.5 | 99.9 | 101.2 |
| PARTICULATE WT-PARTIAL | MG | 71.50 | 96.60 | 84.05 |
| PARTICULATE WT-TOTAL | MG | 109.80 | 128.40 | 119.10 |
| PERC IMPINGER CATCH | | 34.9 | 24.8 | 29.8 |
| PART. LOAD-PTL,STD CN | GR/DSCF | 0.01573 | 0.02343 | 0.01958 |
| PART. LOAD-TTL,STD CN | GR/DSCF | 0.02416 | 0.03114 | 0.02765 |
| PART. LOAD-PTL,STD CN @ 12% CO2 | | 0.03372 | 0.05020 | 0.04196 |
| PART. LOAD-TTL,STD CN @ 12% CO2 | | 0.05178 | 0.06673 | 0.05925 |
| PART. LOAD-PTL,STK CN | GR/ACF | 0.01032 | 0.01522 | 0.01277 |
| PART. LOAD-TTL,STK CN | GR/ACF | 0.01584 | 0.02023 | 0.01804 |
| PARTIC EMIS-PARTIAL | LB/HR | 0.20 | 0.28 | 0.24 |
| PARTIC EMIS-TOTAL | LB/HR | 0.31 | 0.37 | 0.34 |
| PART EMIS/WT PRD FD PTL | LB/TON | 6.99820 | 9.69434 | 8.34627 |
| PART EMIS/WT PRD FD TTL | LB/TON | 10.74688 | 12.88564 | 11.81626 |
| PERCENT EXCESS AIR | | 155.6 | 155.6 | 155.6 |

PLANT: B5 B PB
LOCATION: NYC
OPERATOR: ERI

## PARTICULATE SUMMARY IN ENGLISH UNITS

| DESCRIPTION | UNITS | 1 | 2 | AVERAGE |
|---|---|---|---|---|
| DATE OF RUN | | 05-12-73 | 05-12-73 | |
| STACK AREA | FT2 | 2.780 | 2.780 | |
| NET TIME OF RUN | MIN | 60.0 | 60.0 | |
| BAROMETRIC PRESSURE | IN.HG | 30.38 | 30.38 | |
| AVG ORIFICE PRES DROP | IN.H2O | 1.210 | 1.280 | |
| VOL DRY GAS-METER COND | DCF | 34.17 | 35.56 | |
| AVG GAS METER TEMP | DEG.F | 82.5 | 86.9 | |
| VOL DRY GAS-STD COND | DSCF | 33.99 | 35.09 | |
| TOTAL H2O COLLECTED | ML | 52.0 | 50.8 | |
| VOL H2O VAPOR-STD COND | SCF | 2.46 | 2.41 | |
| PERCENT MOISTURE BY VOL | | 6.8 | 6.4 | |
| MOLE FRACTION DRY GAS | | 0.932 | 0.936 | |
| PERCENT CO2 BY VOL, DRY | | 7.0 | 7.0 | |
| PERCENT O2 BY VOL, DRY | | 10.8 | 10.8 | |
| PERCENT CO BY VOL, DRY | | 0.0 | 0.0 | |
| PERCENT N2 BY VOL, DRY | | 82.2 | 82.2 | |
| MOLECULAR WT-DRY STK GAS | | 29.55 | 29.55 | |
| MOLECULAR WT-STK GAS | | 28.77 | 28.81 | |
| AVG STACK TEMPERATURE | DEG.F | 293.0 | 295.0 | |
| NET SAMPLING POINTS | | 1 | 1 | |
| STACK PRESSURE, ABSOLUTE | IN.HG | 30.38 | 30.38 | |
| AVG STACK GAS VELOCITY | FPS | 9.779 | 10.499 | 10.139 |
| STK FLOWRATE, DRY,STD CN | DSCFM | 1087. | 1168. | 1127. |
| ACTUAL STACK FLOWRATE | ACFM | 1631. | 1751. | 1691. |
| PERCENT ISOKINETIC | | 106.3 | 102.1 | 104.2 |
| PARTICULATE WT-PARTIAL | MG | 74.40 | 233.40 | 153.90 |
| PARTICULATE WT-TOTAL | MG | 117.10 | 322.50 | 219.80 |
| PERC IMPINGER CATCH | | 36.5 | 27.6 | 32.0 |
| PART. LOAD-PTL,STD CN | GR/DSCF | 0.03371 | 0.10244 | 0.06808 |
| PART. LOAD-TTL,STD CN | GR/DSCF | 0.05306 | 0.14155 | 0.09730 |
| PART. LOAD-PTL,STD CN @ 12% CO2 | | 0.05779 | 0.17561 | 0.11670 |
| PART. LOAD-TTL,STD CN @ 12% CO2 | | 0.09096 | 0.24265 | 0.16680 |
| PART. LOAD-PTL,STK CN | GR/ACF | 0.02245 | 0.06827 | 0.04536 |
| PART. LOAD-TTL,STK CN | GR/ACF | 0.03533 | 0.09434 | 0.06483 |
| PARTIC EMIS-PARTIAL | LB/HR | 0.31 | 1.03 | 0.67 |
| PARTIC EMIS-TOTAL | LB/HR | 0.49 | 1.42 | 0.96 |
| PART EMIS/WT PRD FD PTL | LB/TON | 7.98955 | 26.09265 | 17.04109 |
| PART EMIS/WT PRD FD TTL | LB/TON | 12.57496 | 36.05347 | 24.31421 |
| PERCENT EXCESS AIR | | 99.1 | 99.1 | 99.1 |

PLANT: C1BHB
LOCATION: NYC
OPERATOR: ERI

## PARTICULATE SUMMARY IN ENGLISH UNITS

| DESCRIPTION | UNITS | 1 | 2 | AVERAGE |
|---|---|---|---|---|
| DATE OF RUN | | 06-27-73 | 06-27-73 | |
| STACK AREA | FT2 | 49.000 | 49.000 | |
| NET TIME OF RUN | MIN | 60.0 | 64.0 | |
| BAROMETRIC PRESSURE | IN.HG | 29.97 | 29.97 | |
| AVG ORIFICE PRES DROP | IN.H2O | 6.137 | 7.687 | |
| VOL DRY GAS-METER COND | DCF | 81.59 | 70.10 | |
| AVG GAS METER TEMP | DEG.F | 92.6 | 81.1 | |
| VOL DRY GAS-STD COND | DSCF | 79.54 | 70.06 | |
| TOTAL H2O COLLECTED | ML | 61.3 | 61.3 | |
| VOL H2O VAPOR-STD COND | SCF | 2.91 | 2.91 | |
| PERCENT MOISTURE BY VOL | | 3.5 | 4.0 | |
| MOLE FRACTION DRY GAS | | 0.965 | 0.960 | |
| PERCENT CO2 BY VOL, DRY | | 1.4 | 1.4 | |
| PERCENT O2 BY VOL, DRY | | 19.7 | 19.7 | |
| PERCENT CO BY VOL, DRY | | 0.0 | 0.0 | |
| PERCENT N2 BY VOL, DRY | | 78.9 | 78.9 | |
| MOLECULAR WT-DRY STK GAS | | 29.01 | 29.01 | |
| MOLECULAR WT-STK GAS | | 28.62 | 28.57 | |
| AVG STACK TEMPERATURE | DEG.F | 158.0 | 180.0 | |
| NET SAMPLING POINTS | | 1 | 1 | |
| STACK PRESSURE, ABSOLUTE | IN.HG | 29.97 | 29.97 | |
| AVG STACK GAS VELOCITY | FPS | 8.229 | 7.436 | 7.832 |
| STK FLOWRATE, DRY,STD CN | DSCFM | 20045. | 17409. | 18727. |
| ACTUAL STACK FLOWRATE | ACFM | 24192. | 21863. | 23027. |
| PERCENT ISOKINETIC | | 105.6 | 100.4 | 103.0 |
| PARTICULATE WT-PARTIAL | MG | 21.80 | 8.20 | 15.00 |
| PARTICULATE WT-TOTAL | MG | 56.80 | 59.30 | 58.05 |
| PERC IMPINGER CATCH | | 61.6 | 86.2 | 73.9 |
| PART. LOAD-PTL,STD CN | GR/DSCF | 0.00422 | 0.00180 | 0.00301 |
| PART. LOAD-TTL,STD CN | GR/DSCF | 0.01100 | 0.01304 | 0.01202 |
| PART. LOAD-PTL,STD CN @ 12% CO2 | | 0.03618 | 0.01545 | 0.02581 |
| PART. LOAD-TTL,STD CN @ 12% CO2 | | 0.09426 | 0.11173 | 0.10300 |
| PART. LOAD-PTL,STK CN | GR/ACF | 0.00350 | 0.00143 | 0.00246 |
| PART. LOAD-TTL,STK CN | GR/ACF | 0.00911 | 0.01037 | 0.00974 |
| PARTIC EMIS-PARTIAL | LB/HR | 0.73 | 0.27 | 0.50 |
| PARTIC EMIS-TOTAL | LB/HR | 1.89 | 1.95 | 1.92 |
| PART EMIS/WT PRD FD PTL | LB/TON | 7.39974 | 2.74473 | 5.07223 |
| PART EMIS/WT PRD FD TTL | LB/TON | 19.28004 | 19.84904 | 19.56454 |
| PERCENT EXCESS AIR | | 1744.0 | 1744.0 | 1744.0 |

PLANT: C1BHB(SOOT)
LOCATION: NYC
OPERATOR: ERI

## PARTICULATE SUMMARY IN ENGLISH UNITS

| DESCRIPTION | UNITS | 3 | 4 | AVERAGE |
|---|---|---|---|---|
| DATE OF RUN | | 06-27-73 | 06-27-73 | |
| STACK AREA | FT2 | 49.000 | 49.000 | |
| NET TIME OF RUN | MIN | 64.0 | 64.0 | |
| BAROMETRIC PRESSURE | IN.HG | 29.94 | 29.94 | |
| AVG ORIFICE PRES DROP | IN.H2O | 5.460 | 6.440 | |
| VOL DRY GAS-METER COND | DCF | 76.59 | 79.97 | |
| AVG GAS METER TEMP | DEG.F | 92.0 | 82.5 | |
| VOL DRY GAS-STD COND | DSCF | 74.56 | 79.40 | |
| TOTAL H2O COLLECTED | ML | 53.7 | 50.1 | |
| VOL H2O VAPOR-STD COND | SCF | 2.55 | 2.37 | |
| PERCENT MOISTURE BY VOL | | 3.3 | 2.9 | |
| MOLE FRACTION DRY GAS | | 0.967 | 0.971 | |
| PERCENT CO2 BY VOL, DRY | | 1.7 | 1.7 | |
| PERCENT O2 BY VOL, DRY | | 18.5 | 18.5 | |
| PERCENT CO BY VOL, DRY | | 0.1 | 0.1 | |
| PERCENT N2 BY VOL, DRY | | 79.7 | 79.7 | |
| MOLECULAR WT-DRY STK GAS | | 29.01 | 29.01 | |
| MOLECULAR WT-STK GAS | | 28.65 | 28.69 | |
| AVG STACK TEMPERATURE | DEG.F | 150.0 | 150.0 | |
| NET SAMPLING POINTS | | 1 | 1 | |
| STACK PRESSURE, ABSOLUTE | IN.HG | 29.94 | 29.94 | |
| AVG STACK GAS VELOCITY | FPS | 7.735 | 8.267 | 8.001 |
| STK FLOWRATE, DRY,STD CN | DSCFM | 19116. | 20514. | 19815. |
| ACTUAL STACK FLOWRATE | ACFM | 22742. | 24306. | 23524. |
| PERCENT ISOKINETIC | | 97.3 | 96.6 | 97.0 |
| PARTICULATE WT-PARTIAL | MG | 21.80 | 27.30 | 24.55 |
| PARTICULATE WT-TOTAL | MG | 64.00 | 66.00 | 65.00 |
| PERC IMPINGER CATCH | | 65.9 | 58.6 | 62.3 |
| PART. LOAD-PTL,STD CN | GR/DSCF | 0.00450 | 0.00529 | 0.00490 |
| PART. LOAD-TTL,STD CN | GR/DSCF | 0.01322 | 0.01280 | 0.01301 |
| PART. LOAD-PTL,STD CN @ 12% CO2 | | 0.03179 | 0.03738 | 0.03458 |
| PART. LOAD-TTL,STD CN @ 12% CO2 | | 0.09331 | 0.09036 | 0.09184 |
| PART. LOAD-PTL,STK CN | GR/ACF | 0.00378 | 0.00447 | 0.00412 |
| PART. LOAD-TTL,STK CN | GR/ACF | 0.01111 | 0.01080 | 0.01095 |
| PARTIC EMIS-PARTIAL | LB/HR | 0.74 | 0.93 | 0.83 |
| PARTIC EMIS-TOTAL | LB/HR | 2.17 | 2.25 | 2.21 |
| PART EMIS/WT PRD FD PTL | LB/TON | 7.41506 | 9.35736 | 8.38621 |
| PART EMIS/WT PRD FD TTL | LB/TON | 21.76898 | 22.62215 | 22.19556 |
| PERCENT EXCESS AIR | | 712.1 | 712.1 | 712.1 |

PLANT: D1MPB
LOCATION: NYC
OPERATOR: ERI

PARTICULATE SUMMARY IN ENGLISH UNITS

| DESCRIPTION | UNITS | 1 | 2 | AVERAGE |
|---|---|---|---|---|
| DATE OF RUN | | 03-27-73 | 03-27-73 | |
| STACK AREA | FT2 | 1.000 | 1.000 | |
| NET TIME OF RUN | MIN | 60.0 | 60.0 | |
| BAROMETRIC PRESSURE | IN.HG | 29.86 | 29.86 | |
| AVG ORIFICE PRES DROP | IN.H2O | 2.100 | 2.158 | |
| VOL DRY GAS-METER COND | DCF | 48.59 | 48.16 | |
| AVG GAS METER TEMP | DEG.F | 83.3 | 84.7 | |
| VOL DRY GAS-STD COND | DSCF | 47.53 | 47.00 | |
| TOTAL H2O COLLECTED | ML | 81.0 | 79.0 | |
| VOL H2O VAPOR-STD COND | SCF | 3.84 | 3.74 | |
| PERCENT MOISTURE BY VOL | | 7.5 | 7.4 | |
| MOLE FRACTION DRY GAS | | 0.925 | 0.926 | |
| PERCENT CO2 BY VOL, DRY | | 7.0 | 7.0 | |
| PERCENT O2 BY VOL, DRY | | 10.7 | 10.7 | |
| PERCENT CO BY VOL, DRY | | 0.5 | 0.5 | |
| PERCENT N2 BY VOL, DRY | | 81.8 | 81.8 | |
| MOLECULAR WT-DRY STK GAS | | 29.55 | 29.55 | |
| MOLECULAR WT-STK GAS | | 28.68 | 28.70 | |
| AVG STACK TEMPERATURE | DEG.F | 310.0 | 312.0 | |
| NET SAMPLING POINTS | | 1 | 1 | |
| STACK PRESSURE, ABSOLUTE | IN.HG | 29.86 | 29.86 | |
| AVG STACK GAS VELOCITY | FPS | 25.727 | 25.100 | 25.414 |
| STK FLOWRATE, DRY,STD CN | DSCFM | 981. | 955. | 968. |
| ACTUAL STACK FLOWRATE | ACFM | 1544. | 1506. | 1525. |
| PERCENT ISOKINETIC | | 105.3 | 106.9 | 106.1 |
| PARTICULATE WT-PARTIAL | MG | 50.20 | 45.50 | 47.85 |
| PARTICULATE WT-TOTAL | MG | 85.30 | 95.30 | 90.30 |
| PERC IMPINGER CATCH | | 41.1 | 52.3 | 46.7 |
| PART. LOAD-PTL,STD CN | GR/DSCF | 0.01626 | 0.01491 | 0.01559 |
| PART. LOAD-TTL,STD CN | GR/DSCF | 0.02764 | 0.03123 | 0.02943 |
| PART. LOAD-PTL,STD CN @ 12% CO2 | | 0.02788 | 0.02556 | 0.02672 |
| PART. LOAD-TTL,STD CN @ 12% CO2 | | 0.04738 | 0.05353 | 0.05045 |
| PART. LOAD-PTL,STK CN | GR/ACF | 0.01033 | 0.00945 | 0.00989 |
| PART. LOAD-TTL,STK CN | GR/ACF | 0.01755 | 0.01980 | 0.01868 |
| PARTIC EMIS-PARTIAL | LB/HR | 0.14 | 0.12 | 0.13 |
| PARTIC EMIS-TOTAL | LB/HR | 0.23 | 0.26 | 0.24 |
| PART EMIS/WT PRD FD PTL | LB/TON | 8.54670 | 7.63137 | 8.08903 |
| PART EMIS/WT PRD FD TTL | LB/TON | 14.52258 | 15.98394 | 15.25326 |
| PERCENT EXCESS AIR | | 93.8 | 93.8 | 93.8 |

PLANT: D2MPB
LOCATION: NYC
OPERATOR: ERI

## PARTICULATE SUMMARY IN ENGLISH UNITS

| DESCRIPTION | UNITS | 1 | 2 | AVERAGE |
|---|---|---|---|---|
| DATE OF RUN | | 03-23-73 | 03-23-73 | |
| STACK AREA | FT2 | 1.000 | 1.000 | |
| NET TIME OF RUN | MIN | 60.0 | 60.0 | |
| BAROMETRIC PRESSURE | IN.HG | 30.04 | 30.04 | |
| AVG ORIFICE PRES DROP | IN.H2O | 1.043 | 1.012 | |
| VOL DRY GAS-METER COND | DCF | 33.64 | 33.96 | |
| AVG GAS METER TEMP | DEG.F | 74.5 | 68.3 | |
| VOL DRY GAS-STD COND | DSCF | 33.56 | 34.28 | |
| TOTAL H2O COLLECTED | ML | 46.0 | 52.0 | |
| VOL H2O VAPOR-STD COND | SCF | 2.18 | 2.46 | |
| PERCENT MOISTURE BY VOL | | 6.1 | 6.7 | |
| MOLE FRACTION DRY GAS | | 0.939 | 0.933 | |
| PERCENT CO2 BY VOL, DRY | | 5.8 | 5.8 | |
| PERCENT O2 BY VOL, DRY | | 13.7 | 13.7 | |
| PERCENT CO BY VOL, DRY | | 0.5 | 0.5 | |
| PERCENT N2 BY VOL, DRY | | 80.0 | 80.0 | |
| MOLECULAR WT-DRY STK GAS | | 29.48 | 29.48 | |
| MOLECULAR WT-STK GAS | | 28.78 | 28.71 | |
| AVG STACK TEMPERATURE | DEG.F | 227.0 | 227.0 | |
| NET SAMPLING POINTS | | 1 | 1 | |
| STACK PRESSURE, ABSOLUTE | IN.HG | 30.04 | 30.04 | |
| AVG STACK GAS VELOCITY | FPS | 36.308 | 34.924 | 35.616 |
| STK FLOWRATE, DRY,STD CN | DSCFM | 1584. | 1514. | 1549. |
| ACTUAL STACK FLOWRATE | ACFM | 2178. | 2095. | 2137. |
| PERCENT ISOKINETIC | | 103.6 | 110.7 | 107.2 |
| PARTICULATE WT-PARTIAL | MG | 900.90 | 645.70 | 773.30 |
| PARTICULATE WT-TOTAL | MG | 935.10 | 668.80 | 801.95 |
| PERC IMPINGER CATCH | | 3.7 | 3.5 | 3.6 |
| PART. LOAD-PTL,STD CN | GR/DSCF | 0.41339 | 0.29007 | 0.35173 |
| PART. LOAD-TTL,STD CN | GR/DSCF | 0.42908 | 0.30044 | 0.36476 |
| PART. LOAD-PTL,STD CN @ 12% CO2 | | 0.85528 | 0.60014 | 0.72771 |
| PART. LOAD-TTL,STD CN @ 12% CO2 | | 0.88775 | 0.62161 | 0.75468 |
| PART. LOAD-PTL,STK CN | GR/ACF | 0.30042 | 0.20944 | 0.25493 |
| PART. LOAD-TTL,STK CN | GR/ACF | 0.31183 | 0.21693 | 0.26438 |
| PARTIC EMIS-PARTIAL | LB/HR | 5.61 | 3.76 | 4.69 |
| PARTIC EMIS-TOTAL | LB/HR | 5.83 | 3.90 | 4.86 |
| PART EMIS/WT PRD FD PTL | LB/TON | ******** | 114.40437 | 142.50484 |
| PART EMIS/WT PRD FD TTL | LB/TON | ******** | 118.49724 | 147.78955 |
| PERCENT EXCESS AIR | | 175.4 | 175.4 | 175.4 |

PLANT: D3MPB
LOCATION: NYC
OPERATOR: ERI

## PARTICULATE SUMMARY IN ENGLISH UNITS

| DESCRIPTION | UNITS | 1 | 2 | AVERAGE |
|---|---|---|---|---|
| DATE OF RUN | | 04-04-73 | 04-04-73 | |
| STACK AREA | FT2 | 1.000 | 1.000 | |
| NET TIME OF RUN | MIN | 60.0 | 60.0 | |
| BAROMETRIC PRESSURE | IN.HG | 29.71 | 29.71 | |
| AVG ORIFICE PRES DROP | IN.H2O | 0.915 | 0.840 | |
| VOL DRY GAS-METER COND | DCF | 32.36 | 30.20 | |
| AVG GAS METER TEMP | DEG.F | 86.3 | 81.8 | |
| VOL DRY GAS-STD COND | DSCF | 31.24 | 29.39 | |
| TOTAL H2O COLLECTED | MI | 49.7 | 40.0 | |
| VOL H2O VAPOR-STD COND | SCF | 2.36 | 1.90 | |
| PERCENT MOISTURE BY VOL | | 7.0 | 6.1 | |
| MOLE FRACTION DRY GAS | | 0.930 | 0.939 | |
| PERCENT CO2 BY VOL, DRY | | 5.6 | 5.6 | |
| PERCENT O2 BY VOL, DRY | | 13.1 | 13.0 | |
| PERCENT CO BY VOL, DRY | | 0.2 | 0.2 | |
| PERCENT N2 BY VOL, DRY | | 81.1 | 81.2 | |
| MOLECULAR WT-DRY STK GAS | | 29.42 | 29.42 | |
| MOLECULAR WT-STK GAS | | 28.62 | 28.72 | |
| AVG STACK TEMPERATURE | DEG.F | 280.0 | 279.0 | |
| NET SAMPLING POINTS | | 1 | 1 | |
| STACK PRESSURE, ABSOLUTE | IN.HG | 29.71 | 29.71 | |
| AVG STACK GAS VELOCITY | FPS | 36.155 | 35.308 | 35.732 |
| STK FLOWRATE, DRY,STD CN | DSCFM | 1434. | 1417. | 1426. |
| ACTUAL STACK FLOWRATE | ACFM | 2169. | 2118. | 2144. |
| PERCENT ISOKINETIC | | 106.5 | 101.4 | 104.0 |
| PARTICULATE WT-PARTIAL | MG | 35.20 | 65.00 | 50.10 |
| PARTICULATE WT-TOTAL | MG | 125.60 | 112.70 | 119.15 |
| PERC IMPINGER CATCH | | 72.0 | 42.3 | 57.1 |
| PART. LOAD-PTL,STD CN | GR/DSCF | 0.01735 | 0.03406 | 0.02571 |
| PART. LOAD-TTL,STD CN | GR/DSCF | 0.06192 | 0.05905 | 0.06049 |
| PART. LOAD-PTL,STD CN @ 12% CO2 | | 0.03718 | 0.07299 | 0.05508 |
| PART. LOAD-TTL,STD CN @ 12% CO2 | | 0.13268 | 0.12655 | 0.12961 |
| PART. LOAD-PTL,STK CN | GR/ACF | 0.01147 | 0.02277 | 0.01712 |
| PART. LOAD-TTL,STK CN | GR/ACF | 0.04091 | 0.03948 | 0.04019 |
| PARTIC EMIS-PARTIAL | LB/HR | 0.21 | 0.41 | 0.31 |
| PARTIC EMIS-TOTAL | LB/HR | 0.76 | 0.72 | 0.74 |
| PART EMIS/WT PRD FD PTL | LB/TON | 5.25436 | 10.08946 | 7.67191 |
| PART EMIS/WT PRD FD TTL | LB/TON | 18.74850 | 17.49356 | 18.12103 |
| PERCENT EXCESS AIR | | 154.6 | 151.1 | 152.8 |

PLANT: D4BPB
LOCATION: NYC
OPERATOR: ERI

## PARTICULATE SUMMARY IN ENGLISH UNITS

| DESCRIPTION | UNITS | 1 | 2 | AVERAGE |
|---|---|---|---|---|
| DATE OF RUN | | 05-05-73 | 05-05-73 | |
| STACK AREA | FT2 | 1.000 | 1.000 | |
| NET TIME OF RUN | MIN | 60.0 | 60.0 | |
| BAROMETRIC PRESSURE | IN.HG | 30.35 | 30.30 | |
| AVG ORIFICE PRES DROP | IN.H2O | 0.990 | 1.038 | |
| VOL DRY GAS-METER COND | DCF | 32.66 | 31.71 | |
| AVG GAS METER TEMP | DEG.F | 58.2 | 61.3 | |
| VOL DRY GAS-STD COND | DSCF | 33.95 | 32.72 | |
| TOTAL H2O COLLECTED | ML | 44.0 | 43.8 | |
| VOL H2O VAPOR-STD COND | SCF | 2.09 | 2.08 | |
| PERCENT MOISTURE BY VOL | | 5.8 | 6.0 | |
| MOLE FRACTION DRY GAS | | 0.942 | 0.940 | |
| PERCENT CO2 BY VOL, DRY | | 4.8 | 4.8 | |
| PERCENT O2 BY VOL, DRY | | 13.5 | 13.5 | |
| PERCENT CO BY VOL, DRY | | 1.0 | 1.0 | |
| PERCENT N2 BY VOL, DRY | | 80.7 | 80.7 | |
| MOLECULAR WT-DRY STK GAS | | 29.31 | 29.31 | |
| MOLECULAR WT-STK GAS | | 28.65 | 28.63 | |
| AVG STACK TEMPERATURE | DEG.F | 278.0 | 278.0 | |
| NET SAMPLING POINTS | | 1 | 1 | |
| STACK PRESSURE, ABSOLUTE | IN.HG | 30.35 | 30.30 | |
| AVG STACK GAS VELOCITY | FPS | 37.579 | 38.040 | 37.809 |
| STK FLOWRATE, DRY,STD CN | DSCFM | 1547. | 1561. | 1554. |
| ACTUAL STACK FLOWRATE | ACFM | 2255. | 2282. | 2269. |
| PERCENT ISOKINETIC | | 107.3 | 102.5 | 104.9 |
| PARTICULATE WT-PARTIAL | MG | 289.20 | 179.20 | 234.20 |
| PARTICULATE WT-TOTAL | MG | 335.30 | 266.50 | 300.90 |
| PERC IMPINGER CATCH | | 13.7 | 32.8 | 23.3 |
| PART. LOAD-PTL,STD CN | GR/DSCF | 0.13117 | 0.08434 | 0.10776 |
| PART. LOAD-TTL,STD CN | GR/DSCF | 0.15208 | 0.12543 | 0.13876 |
| PART. LOAD-PTL,STD CN @ 12% CO2 | | 0.32794 | 0.21085 | 0.26939 |
| PART. LOAD-TTL,STD CN @ 12% CO2 | | 0.38021 | 0.31357 | 0.34689 |
| PART. LOAD-PTL,STK CN | GR/ACF | 0.08996 | 0.05763 | 0.07380 |
| PART. LOAD-TTL,STK CN | GR/ACF | 0.10430 | 0.08571 | 0.09500 |
| PARTIC EMIS-PARTIAL | LB/HR | 1.74 | 1.13 | 1.43 |
| PARTIC EMIS-TOTAL | LB/HR | 2.02 | 1.68 | 1.85 |
| PART EMIS/WT PRD FD PTL | LB/TON | 41.41705 | 26.86107 | 34.13905 |
| PART EMIS/WT PRD FD TTL | LB/TON | 48.01915 | 39.94684 | 43.98299 |
| PERCENT EXCESS AIR | | 156.5 | 156.5 | 156.5 |

PLANT: U1BPB
LOCATION: NYC
OPERATOR: ERI

## PARTICULATE SUMMARY IN ENGLISH UNITS

| DESCRIPTION | UNITS | 1 | 2 | AVERAGE |
|---|---|---|---|---|
| DATE OF RUN | | 05-22-73 | 05-22-73 | |
| STACK AREA | FT2 | 1.000 | 1.000 | |
| NET TIME OF RUN | MIN | 60.0 | 60.0 | |
| BAROMETRIC PRESSURE | IN.HG | 29.64 | 29.64 | |
| AVG ORIFICE PRES DROP | IN.H2O | 1.054 | 0.959 | |
| VOL DRY GAS-METER COND | DCF | 33.36 | 31.82 | |
| AVG GAS METER TEMP | DEG.F | 86.1 | 78.9 | |
| VOL DRY GAS-STD COND | DSCF | 32.14 | 31.07 | |
| TOTAL H2O COLLECTED | ML | 48.2 | 43.9 | |
| VOL H2O VAPOR-STD COND | SCF | 2.28 | 2.08 | |
| PERCENT MOISTURE BY VOL | | 6.6 | 6.3 | |
| MOLE FRACTION DRY GAS | | 0.934 | 0.937 | |
| PERCENT CO2 BY VOL, DRY | | 1.5 | 1.5 | |
| PERCENT O2 BY VOL, DRY | | 18.9 | 18.9 | |
| PERCENT CO BY VOL, DRY | | 0.2 | 0.2 | |
| PERCENT N2 BY VOL, DRY | | 79.4 | 79.4 | |
| MOLECULAR WT-DRY STK GAS | | 29.00 | 29.00 | |
| MOLECULAR WT-STK GAS | | 28.27 | 28.31 | |
| AVG STACK TEMPERATURE | DEG.F | 305.0 | 305.0 | |
| NET SAMPLING POINTS | | 1 | 1 | |
| STACK PRESSURE, ABSOLUTE | IN.HG | 29.64 | 29.64 | |
| AVG STACK GAS VELOCITY | FPS | 40.181 | 38.349 | 39.265 |
| STK FLOWRATE, DRY,STD CN | DSCFM | 1544. | 1480. | 1512. |
| ACTUAL STACK FLOWRATE | ACFM | 2411. | 2301. | 2356. |
| PERCENT ISOKINETIC | | 101.8 | 102.7 | 102.2 |
| PARTICULATE WT-PARTIAL | MG | 230.90 | 87.20 | 159.05 |
| PARTICULATE WT-TOTAL | MG | 286.10 | 115.50 | 200.80 |
| PERC IMPINGER CATCH | | 19.3 | 24.5 | 21.9 |
| PART. LOAD-PTL,STD CN | GR/DSCF | 0.11062 | 0.04323 | 0.07692 |
| PART. LOAD-TTL,STD CN | GR/DSCF | 0.13707 | 0.05725 | 0.09716 |
| PART. LOAD-PTL,STD CN @ 12% CO2 | | 0.88497 | 0.34580 | 0.61538 |
| PART. LOAD-TTL,STD CN @ 12% CO2 | | 1.09653 | 0.45803 | 0.77728 |
| PART. LOAD-PTL,STK CN | GR/ACF | 0.07083 | 0.02778 | 0.04931 |
| PART. LOAD-TTL,STK CN | GR/ACF | 0.08776 | 0.03680 | 0.06228 |
| PARTIC EMIS-PARTIAL | LB/HR | 1.46 | 0.55 | 1.01 |
| PARTIC EMIS-TOTAL | LB/HR | 1.81 | 0.73 | 1.27 |
| PART EMIS/WT PRD FD PTL | LB/TON | 49.81177 | 18.64821 | 34.22998 |
| PART EMIS/WT PRD FD TTL | LB/TON | 61.72005 | 24.70033 | 43.21017 |
| PERCENT EXCESS AIR | | 869.7 | 869.7 | 869.7 |

OPERATOR: ERI

PARTICULATE SUMMARY IN ENGLISH UNITS

| DESCRIPTION | UNITS | 1 | 2 | AVERAGE |
|---|---|---|---|---|
| DATE OF RUN | | 04-20-73 | 04-20-73 | |
| STACK AREA | FT2 | 1.000 | 1.000 | |
| NET TIME OF RUN | MIN | 60.0 | 60.0 | |
| BAROMETRIC PRESSURE | IN.HG | 30.40 | 30.40 | |
| AVG ORIFICE PRES DROP | IN.H2O | 3.640 | 3.199 | |
| VOL DRY GAS-METER COND | DCF | 57.47 | 62.46 | |
| AVG GAS METER TEMP | DEG.F | 76.0 | 76.4 | |
| VOL DRY GAS-STD COND | DSCF | 58.24 | 63.17 | |
| TOTAL H2O COLLECTED | ML | 65.2 | 63.0 | |
| VOL H2O VAPOR-STD COND | SCF | 3.09 | 2.99 | |
| PERCENT MOISTURE BY VOL | | 5.0 | 4.5 | |
| MOLE FRACTION DRY GAS | | 0.950 | 0.955 | |
| PERCENT CO2 BY VOL, DRY | | 5.5 | 5.5 | |
| PERCENT O2 BY VOL, DRY | | 11.8 | 11.8 | |
| PERCENT CO BY VOL, DRY | | 0.5 | 0.5 | |
| PERCENT N2 BY VOL, DRY | | 82.2 | 82.2 | |
| MOLECULAR WT-DRY STK GAS | | 29.35 | 29.35 | |
| MOLECULAR WT-STK GAS | | 28.78 | 28.84 | |
| AVG STACK TEMPERATURE | DEG.F | 210.0 | 210.0 | |
| NET SAMPLING POINTS | | 1 | 1 | |
| STACK PRESSURE, ABSOLUTE | IN.HG | 30.40 | 30.40 | |
| AVG STACK GAS VELOCITY | FPS | 28.033 | 28.038 | 28.035 |
| STK FLOWRATE, DRY,STD CN | DSCFM | 1283. | 1291. | 1287. |
| ACTUAL STACK FLOWRATE | ACFM | 1682. | 1682. | 1682. |
| PERCENT ISOKINETIC | | 98.6 | 106.4 | 102.5 |
| PARTICULATE WT-PARTIAL | MG | 84.60 | 31.60 | 58.10 |
| PARTICULATE WT-TOTAL | MG | 114.30 | 73.60 | 93.95 |
| PERC IMPINGER CATCH | | 26.0 | 57.1 | 41.5 |
| PART. LOAD-PTL,STD CN | GR/DSCF | 0.02237 | 0.00770 | 0.01504 |
| PART. LOAD-TTL,STD CN | GR/DSCF | 0.03023 | 0.01794 | 0.02408 |
| PART. LOAD-PTL,STD CN @ 12% CO2 | | 0.04881 | 0.01681 | 0.03281 |
| PART. LOAD-TTL,STD CN @ 12% CO2 | | 0.06595 | 0.03915 | 0.05255 |
| PART. LOAD-PTL,STK CN | GR/ACF | 0.01706 | 0.00591 | 0.01148 |
| PART. LOAD-TTL,STK CN | GR/ACF | 0.02305 | 0.01376 | 0.01841 |
| PARTIC EMIS-PARTIAL | LB/HR | 0.25 | 0.09 | 0.17 |
| PARTIC EMIS-TOTAL | LB/HR | 0.33 | 0.20 | 0.27 |
| PART EMIS/WT PRD FD PTL | LB/TON | 8.09577 | 2.80365 | 5.44971 |
| PART EMIS/WT PRD FD TTL | LB/TON | 10.93790 | 6.53003 | 8.73396 |
| PERCENT EXCESS AIR | | 113.8 | 113.8 | 113.8 |

PLANT: U2MPB
LOCATION: NYC
OPERATOR: ERI

PARTICULATE SUMMARY IN ENGLISH UNITS

| DESCRIPTION | UNITS | 1 | 2 | AVERAGE |
|---|---|---|---|---|
| DATE OF RUN | | 04-20-73 | 04-20-73 | |
| STACK AREA | FT2 | 1.000 | 1.000 | |
| NET TIME OF RUN | MIN | 60.0 | 60.0 | |
| BAROMETRIC PRESSURE | IN.HG | 30.40 | 30.40 | |
| AVG ORIFICE PRES DROP | IN.H2O | 3.640 | 3.199 | |
| VOL DRY GAS-METER COND | DCF | 57.47 | 62.46 | |
| AVG GAS METER TEMP | DEG.F | 76.0 | 76.4 | |
| VOL DRY GAS-STD COND | DSCF | 58.24 | 63.17 | |
| TOTAL H2O COLLECTED | ML | 65.2 | 63.0 | |
| VOL H2O VAPOR-STD COND | SCF | 3.09 | 2.99 | |
| PERCENT MOISTURE BY VOL | | 5.0 | 4.5 | |
| MOLE FRACTION DRY GAS | | 0.950 | 0.955 | |
| PERCENT CO2 BY VOL, DRY | | 5.5 | 5.5 | |
| PERCENT O2 BY VOL, DRY | | 11.8 | 11.8 | |
| PERCENT CO BY VOL, DRY | | 0.5 | 0.5 | |
| PERCENT N2 BY VOL, DRY | | 82.2 | 82.2 | |
| MOLECULAR WT-DRY STK GAS | | 29.35 | 29.35 | |
| MOLECULAR WT-STK GAS | | 28.78 | 28.84 | |
| AVG STACK TEMPERATURE | DEG.F | 210.0 | 210.0 | |
| NET SAMPLING POINTS | | 1 | 1 | |
| STACK PRESSURE, ABSOLUTE | IN.HG | 30.40 | 30.40 | |
| AVG STACK GAS VELOCITY | FPS | 28.033 | 28.038 | 28.035 |
| STK FLOWRATE, DRY,STD CN | DSCFM | 1283. | 1291. | 1287. |
| ACTUAL STACK FLOWRATE | ACFM | 1682. | 1682. | 1682. |
| PERCENT ISOKINETIC | | 98.6 | 106.4 | 102.5 |
| PARTICULATE WT-PARTIAL | MG | 84.60 | 31.60 | 58.10 |
| PARTICULATE WT-TOTAL | MG | 114.30 | 73.60 | 93.95 |
| PERC IMPINGER CATCH | | 26.0 | 57.1 | 41.5 |
| PART. LOAD-PTL,STD CN | GR/DSCF | 0.02237 | 0.00770 | 0.01504 |
| PART. LOAD-TTL,STD CN | GR/DSCF | 0.03023 | 0.01794 | 0.02408 |
| PART. LOAD-PTL,STD CN @ 12% CO2 | | 0.04881 | 0.01681 | 0.03281 |
| PART. LOAD-TTL,STD CN @ 12% CO2 | | 0.06595 | 0.03915 | 0.05255 |
| PART. LOAD-PTL,STK CN | GR/ACF | 0.01706 | 0.00591 | 0.01148 |
| PART. LOAD-TTL,STK CN | GR/ACF | 0.02305 | 0.01376 | 0.01841 |
| PARTIC EMIS-PARTIAL | LB/HR | 0.25 | 0.09 | 0.17 |
| PARTIC EMIS-TOTAL | LB/HR | 0.33 | 0.20 | 0.27 |
| PART EMIS/WT PRD FD PTL | LB/TON | 8.09577 | 2.80365 | 5.44971 |
| PART EMIS/WT PRD FD TTL | LB/TON | 10.93790 | 6.53003 | 8.73396 |
| PERCENT EXCESS AIR | | 113.8 | 113.8 | 113.8 |

PLANT: U3MPB
LOCATION: NYC
OPERATOR: ERI

## PARTICULATE SUMMARY IN ENGLISH UNITS

| DESCRIPTION | UNITS | 1 | 2 | AVERAGE |
|---|---|---|---|---|
| DATE OF RUN | | 04-18-73 | 04-18-73 | |
| STACK AREA | FT2 | 3.140 | 3.140 | |
| NET TIME OF RUN | MIN | 96.0 | 96.0 | |
| BAROMETRIC PRESSURE | IN.HG | 30.24 | 30.24 | |
| AVG ORIFICE PRES DROP | IN.H2O | 2.414 | 1.784 | |
| VOL DRY GAS-METER COND | DCF | 85.05 | 68.01 | |
| AVG GAS METER TEMP | DEG.F | 94.8 | 90.8 | |
| VOL DRY GAS-STD COND | DSCF | 82.58 | 66.41 | |
| TOTAL H2O COLLECTED | ML | 58.7 | 43.9 | |
| VOL H2O VAPOR-STD COND | SCF | 2.78 | 2.08 | |
| PERCENT MOISTURE BY VOL | | 3.3 | 3.0 | |
| MOLE FRACTION DRY GAS | | 0.967 | 0.970 | |
| PERCENT CO2 BY VOL, DRY | | 3.5 | 3.5 | |
| PERCENT O2 BY VOL, DRY | | 16.0 | 16.0 | |
| PERCENT CO BY VOL, DRY | | 1.0 | 1.0 | |
| PERCENT N2 BY VOL, DRY | | 79.5 | 79.5 | |
| MOLECULAR WT-DRY STK GAS | | 29.20 | 29.20 | |
| MOLECULAR WT-STK GAS | | 28.83 | 28.86 | |
| AVG STACK TEMPERATURE | DEG.F | 205.0 | 207.0 | |
| NET SAMPLING POINTS | | 1 | 1 | |
| STACK PRESSURE, ABSOLUTE | IN.HG | 30.24 | 30.24 | |
| AVG STACK GAS VELOCITY | FPS | 20.701 | 16.434 | 18.568 |
| STK FLOWRATE, DRY,STD CN | DSCFM | 3039. | 2411. | 2725. |
| ACTUAL STACK FLOWRATE | ACFM | 3900. | 3096. | 3498. |
| PERCENT ISOKINETIC | | 78.4 | 79.5 | 78.9 |
| PARTICULATE WT-PARTIAL | MG | 48.80 | 52.60 | 50.70 |
| PARTICULATE WT-TOTAL | MG | 98.50 | 84.00 | 91.25 |
| PERC IMPINGER CATCH | | 50.5 | 37.4 | 43.9 |
| PART. LOAD-PTL,STD CN | GR/DSCF | 0.00910 | 0.01220 | 0.01065 |
| PART. LOAD-TTL,STD CN | GR/DSCF | 0.01837 | 0.01948 | 0.01892 |
| PART. LOAD-PTL,STD CN @ 12% CO2 | | 0.03120 | 0.04182 | 0.03651 |
| PART. LOAD-TTL,STD CN @ 12% CO2 | | 0.06298 | 0.06678 | 0.06488 |
| PART. LOAD-PTL,STK CN | GR/ACF | 0.00709 | 0.00949 | 0.00829 |
| PART. LOAD-TTL,STK CN | GR/ACF | 0.01430 | 0.01516 | 0.01473 |
| PARTIC EMIS-PARTIAL | LB/HR | 0.24 | 0.25 | 0.24 |
| PARTIC EMIS-TOTAL | LB/HR | 0.48 | 0.40 | 0.44 |
| PART EMIS/WT PRD FD PTL | LB/TON | 11.73411 | 12.47600 | 12.10506 |
| PART EMIS/WT PRD FD TTL | LB/TON | 23.68462 | 19.92363 | 21.80412 |
| PERCENT EXCESS AIR | | 282.4 | 282.4 | 282.4 |

PLANT: U4MPB
LOCATION: NYC
OPERATOR: ERI

PARTICULATE SUMMARY IN ENGLISH UNITS

| DESCRIPTION | UNITS | 1 | 2 | AVERAGE |
|---|---|---|---|---|
| DATE OF RUN | | 05-11-73 | 05-11-73 | |
| STACK AREA | FT2 | 1.000 | 1.000 | |
| NET TIME OF RUN | MIN | 60.0 | 60.0 | |
| BAROMETRIC PRESSURE | IN.HG | 30.06 | 30.06 | |
| AVG ORIFICE PRES DROP | IN.H2O | 1.180 | 1.139 | |
| VOL DRY GAS-METER COND | DCF | 32.88 | 33.74 | |
| AVG GAS METER TEMP | DEG.F | 81.6 | 82.3 | |
| VOL DRY GAS-STD COND | DSCF | 32.41 | 33.21 | |
| TOTAL H2O COLLECTED | ML | 47.1 | 50.0 | |
| VOL H2O VAPOR-STD COND | SCF | 2.23 | 2.37 | |
| PERCENT MOISTURE BY VOL | | 6.4 | 6.7 | |
| MOLE FRACTION DRY GAS | | 0.936 | 0.933 | |
| PERCENT CO2 BY VOL, DRY | | 5.4 | 5.4 | |
| PERCENT O2 BY VOL, DRY | | 13.4 | 13.4 | |
| PERCENT CO BY VOL, DRY | | 0.5 | 0.5 | |
| PERCENT N2 BY VOL, DRY | | 80.7 | 80.7 | |
| MOLECULAR WT-DRY STK GAS | | 29.40 | 29.40 | |
| MOLECULAR WT-STK GAS | | 28.67 | 28.64 | |
| AVG STACK TEMPERATURE | DEG.F | 283.0 | 289.0 | |
| NET SAMPLING POINTS | | 1 | 1 | |
| STACK PRESSURE, ABSOLUTE | IN.HG | 30.06 | 30.06 | |
| AVG STACK GAS VELOCITY | FPS | 38.712 | 38.830 | 38.771 |
| STK FLOWRATE, DRY,STD CN | DSCFM | 1557. | 1546. | 1551. |
| ACTUAL STACK FLOWRATE | ACFM | 2323. | 2330. | 2326. |
| PERCENT ISOKINETIC | | 101.8 | 105.1 | 103.4 |
| PARTICULATE WT-PARTIAL | MG | 71.60 | 79.10 | 75.35 |
| PARTICULATE WT-TOTAL | MG | 106.90 | 110.90 | 108.90 |
| PERC IMPINGER CATCH | | 33.0 | 28.7 | 30.8 |
| PART. LOAD-PTL,STD CN | GR/DSCF | 0.03402 | 0.03668 | 0.03535 |
| PART. LOAD-TTL,STD CN | GR/DSCF | 0.05080 | 0.05143 | 0.05111 |
| PART. LOAD-PTL,STD CN @ 12% CO2 | | 0.07560 | 0.08151 | 0.07856 |
| PART. LOAD-TTL,STD CN @ 12% CO2 | | 0.11288 | 0.11428 | 0.11358 |
| PART. LOAD-PTL,STK CN | GR/ACF | 0.02279 | 0.02432 | 0.02356 |
| PART. LOAD-TTL,STK CN | GR/ACF | 0.03403 | 0.03410 | 0.03406 |
| PARTIC EMIS-PARTIAL | LB/HR | 0.45 | 0.49 | 0.47 |
| PARTIC EMIS-TOTAL | LB/HR | 0.68 | 0.68 | 0.68 |
| PART EMIS/WT PRD FD PTL | LB/TON | 17.19870 | 18.40782 | 17.80325 |
| PART EMIS/WT PRD FD TTL | LB/TON | 25.67795 | 25.80818 | 25.74306 |
| PERCENT EXCESS AIR | | 161.3 | 161.3 | 161.3 |

PLANT: USBPB
LOCATION: NYC
OPERATOR: ERI

## PARTICULATE SUMMARY IN ENGLISH UNITS

| DESCRIPTION | UNITS | 1 | 2 | AVERAGE |
|---|---|---|---|---|
| DATE OF RUN | | 05-22-73 | 05-22-73 | |
| STACK AREA | FT2 | 1.000 | 1.000 | |
| NET TIME OF RUN | MIN | 60.0 | 60.0 | |
| BAROMETRIC PRESSURE | IN.HG | 29.64 | 29.64 | |
| AVG ORIFICE PRES DROP | IN.H2O | 1.101 | 1.083 | |
| VOL DRY GAS-METER COND | DCF | 33.48 | 31.82 | |
| AVG GAS METER TEMP | DEG.F | 86.6 | 82.6 | |
| VOL DRY GAS-STD COND | DSCF | 32.24 | 30.87 | |
| TOTAL H2O COLLECTED | ML | 51.7 | 55.5 | |
| VOL H2O VAPOR-STD COND | SCF | 2.45 | 2.63 | |
| PERCENT MOISTURE BY VOL | | 7.1 | 7.9 | |
| MOLE FRACTION DRY GAS | | 0.929 | 0.921 | |
| PERCENT CO2 BY VOL, DRY | | 4.4 | 4.4 | |
| PERCENT O2 BY VOL, DRY | | 13.4 | 13.4 | |
| PERCENT CO BY VOL, DRY | | 0.0 | 0.0 | |
| PERCENT N2 BY VOL, DRY | | 82.2 | 82.2 | |
| MOLECULAR WT-DRY STK GAS | | 29.24 | 29.24 | |
| MOLECULAR WT-STK GAS | | 28.45 | 28.36 | |
| AVG STACK TEMPERATURE | DEG.F | 262.0 | 262.0 | |
| NET SAMPLING POINTS | | 1 | 1 | |
| STACK PRESSURE, ABSOLUTE | IN.HG | 29.64 | 29.64 | |
| AVG STACK GAS VELOCITY | FPS | 37.667 | 37.808 | 37.737 |
| STK FLOWRATE, DRY,STD CN | DSCFM | 1527. | 1520. | 1523. |
| ACTUAL STACK FLOWRATE | ACFM | 2260. | 2268. | 2264. |
| PERCENT ISOKINETIC | | 103.2 | 99.3 | 101.3 |
| PARTICULATE WT-PARTIAL | MG | 379.40 | 437.80 | 408.60 |
| PARTICULATE WT-TOTAL | MG | 408.50 | 469.10 | 438.80 |
| PERC IMPINGER CATCH | | 7.1 | 6.7 | 6.9 |
| PART. LOAD-PTL,STD CN | GR/DSCF | 0.18121 | 0.21840 | 0.19981 |
| PART. LOAD-TTL,STD CN | GR/DSCF | 0.19511 | 0.23402 | 0.21456 |
| PART. LOAD-PTL,STD CN @ 12% CO2 | | 0.49422 | 0.59564 | 0.54493 |
| PART. LOAD-TTL,STD CN @ 12% CO2 | | 0.53213 | 0.63823 | 0.58518 |
| PART. LOAD-PTL,STK CN | GR/ACF | 0.12237 | 0.14624 | 0.13431 |
| PART. LOAD-TTL,STK CN | GR/ACF | 0.13176 | 0.15669 | 0.14423 |
| PARTIC EMIS-PARTIAL | LB/HR | 2.37 | 2.85 | 2.61 |
| PARTIC EMIS-TOTAL | LB/HR | 2.55 | 3.05 | 2.80 |
| PART EMIS/WT PRD FD PTL | LB/TON | 71.22878 | 85.43750 | 78.33313 |
| PART EMIS/WT PRD FD TTL | LB/TON | 76.69205 | 91.54576 | 84.11890 |
| PERCENT EXCESS AIR | | 161.4 | 161.4 | 161.4 |

PLANT: AIMH
LOCATION: NYC
OPERATOR: ERI

PARTICULATE SUMMARY IN ENGLISH UNITS

| DESCRIPTION | UNITS | 1 | 2 | 3 | AVERAGE |
|---|---|---|---|---|---|
| DATE OF RUN | | 06-08-73 | 06-08-73 | 06-08-73 | |
| STACK AREA | FT2 | 1.000 | 1.000 | 1.000 | |
| NET TIME OF RUN | MIN | 64.0 | 64.0 | 64.0 | |
| BAROMETRIC PRESSURE | IN.HG | 30.00 | 30.00 | 30.00 | |
| AVG ORIFICE PRES DROP | IN.H2O | 0.923 | 2.180 | 2.920 | |
| VOL DRY GAS-METER COND | DCF | 34.11 | 48.49 | 57.74 | |
| AVG GAS METER TEMP | DEG.F | 102.4 | 111.3 | 109.1 | |
| VOL DRY GAS-STD COND | DSCF | 32.30 | 45.33 | 54.29 | |
| TOTAL H2O COLLECTED | ML | 56.4 | 87.1 | 72.0 | |
| VOL H2O VAPOR-STD COND | SCF | 2.67 | 4.13 | 3.41 | |
| PERCENT MOISTURE BY VOL | | 7.6 | 8.3 | 5.9 | |
| MOLE FRACTION DRY GAS | | 0.924 | 0.917 | 0.941 | |
| PERCENT CO2 BY VOL, DRY | | 0.8 | 0.8 | 0.8 | |
| PERCENT O2 BY VOL, DRY | | 14.6 | 14.6 | 14.6 | |
| PERCENT CO BY VOL, DRY | | 0.0 | 0.0 | 0.0 | |
| PERCENT N2 BY VOL, DRY | | 84.6 | 84.6 | 84.6 | |
| MOLECULAR WT-DRY STK GAS | | 28.71 | 28.71 | 28.71 | |
| MOLECULAR WT-STK GAS | | 27.89 | 27.82 | 28.08 | |
| AVG STACK TEMPERATURE | DEG.F | 143.0 | 227.0 | 296.0 | |
| NET SAMPLING POINTS | | 1 | 1 | 1 | |
| STACK PRESSURE, ABSOLUTE | IN.HG | 30.00 | 30.00 | 30.00 | |
| AVG STACK GAS VELOCITY | FPS | 14.010 | 23.700 | 29.440 | 22.384 |
| STK FLOWRATE, DRY,STD CN | DSCFM | 684. | 1008. | 1168. | 953. |
| ACTUAL STACK FLOWRATE | ACFM | 841. | 1422. | 1766. | 1343. |
| PERCENT ISOKINETIC | | 96.2 | 91.6 | 94.7 | 94.2 |
| PARTICULATE WT-PARTIAL | MG | 171.10 | 74.50 | 194.20 | 146.60 |
| PARTICULATE WT-TOTAL | MG | 266.60 | 183.20 | 326.10 | 258.63 |
| PERC IMPINGER CATCH | | 35.8 | 59.3 | 40.4 | 45.2 |
| PART. LOAD-PTL,STD CN | GR/DSCF | 0.08159 | 0.02531 | 0.05509 | 0.05400 |
| PART. LOAD-TTL,STD CN | GR/DSCF | 0.12712 | 0.06224 | 0.09251 | 0.09396 |
| PART. LOAD-PTL,STD CN @ 12% CO2 | | 1.22378 | 0.37963 | 0.82637 | 0.80993 |
| PART. LOAD-TTL,STD CN @ 12% CO2 | | 1.90604 | 0.93354 | 1.38763 | 1.40934 |
| PART. LOAD-PTL,STK CN | GR/ACF | 0.06635 | 0.01793 | 0.03641 | 0.04023 |
| PART. LOAD-TTL,STK CN | GR/ACF | 0.10339 | 0.04409 | 0.06113 | 0.06954 |
| PARTIC EMIS-PARTIAL | LB/HR | 0.48 | 0.22 | 0.55 | 0.42 |
| PARTIC EMIS-TOTAL | LB/HR | 0.75 | 0.54 | 0.93 | 0.74 |
| PART EMIS/WT PRD FD PTL | LB/TON | 45.55820 | 8.25113 | 8.55092 | 20.78676 |
| PART EMIS/WT PRD FD TTL | LB/TON | 70.98683 | 20.29004 | 14.35868 | 35.21184 |
| PERCENT EXCESS AIR | | 188.8 | 188.8 | 188.8 | 188.8 |

PLANT: A2BHI
LOCATION: NYC
OPERATOR: ERI

## PARTICULATE SUMMARY IN ENGLISH UNITS

| DESCRIPTION | UNITS | 1 | 2 | AVERAGE |
|---|---|---|---|---|
| DATE OF RUN | | 06-18-73 | 06-18-73 | |
| STACK AREA | FT2 | 1.000 | 1.000 | |
| NET TIME OF RUN | MIN | 56.0 | 56.0 | |
| BAROMETRIC PRESSURE | IN.HG | 30.00 | 30.00 | |
| AVG ORIFICE PRES DROP | IN.H2O | 1.248 | 1.319 | |
| VOL DRY GAS-METER COND | DCF | 33.21 | 35.92 | |
| AVG GAS METER TEMP | DEG.F | 94.8 | 84.8 | |
| VOL DRY GAS-STD COND | DSCF | 31.90 | 35.14 | |
| TOTAL H2O COLLECTED | ML | 37.3 | 39.8 | |
| VOL H2O VAPOR-STD COND | SCF | 1.77 | 1.89 | |
| PERCENT MOISTURE BY VOL | | 5.3 | 5.1 | |
| MOLE FRACTION DRY GAS | | 0.947 | 0.949 | |
| PERCENT CO2 BY VOL, DRY | | 1.2 | 1.8 | |
| PERCENT O2 BY VOL, DRY | | 19.3 | 18.5 | |
| PERCENT CO BY VOL, DRY | | 0.1 | 0.1 | |
| PERCENT N2 BY VOL, DRY | | 79.4 | 79.6 | |
| MOLECULAR WT-DRY STK GAS | | 28.96 | 29.03 | |
| MOLECULAR WT-STK GAS | | 28.39 | 28.47 | |
| AVG STACK TEMPERATURE | DEG.F | 239.0 | 214.0 | |
| NET SAMPLING POINTS | | 1 | 1 | |
| STACK PRESSURE, ABSOLUTE | IN.HG | 30.00 | 30.00 | |
| AVG STACK GAS VELOCITY | FPS | 34.284 | 40.216 | 37.250 |
| STK FLOWRATE, DRY,STD CN | DSCFM | 1481. | 1805. | 1643. |
| ACTUAL STACK FLOWRATE | ACFM | 2057. | 2413. | 2235. |
| PERCENT ISOKINETIC | | 112.8 | 102.0 | 107.4 |
| PARTICULATE WT-PARTIAL | MG | 99.80 | 156.30 | 128.05 |
| PARTICULATE WT-TOTAL | MG | 213.70 | 255.40 | 234.55 |
| PERC IMPINGER CATCH | | 53.3 | 38.8 | 46.1 |
| PART. LOAD-PTL,STD CN | GR/DSCF | 0.04819 | 0.06849 | 0.05834 |
| PART. LOAD-TTL,STD CN | GR/DSCF | 0.10318 | 0.11192 | 0.10755 |
| PART. LOAD-PTL,STD CN @ 12% CO2 | | 0.48186 | 0.45661 | 0.46923 |
| PART. LOAD-TTL,STD CN @ 12% CO2 | | 1.03179 | 0.74612 | 0.88896 |
| PART. LOAD-PTL,STK CN | GR/ACF | 0.03468 | 0.05121 | 0.04295 |
| PART. LOAD-TTL,STK CN | GR/ACF | 0.07426 | 0.08368 | 0.07897 |
| PARTIC EMIS-PARTIAL | LB/HR | 0.61 | 1.06 | 0.84 |
| PARTIC EMIS-TOTAL | LB/HR | 1.31 | 1.73 | 1.52 |
| PART EMIS/WT PRD FD PTL | LB/TON | 9.41309 | 13.16512 | 11.28911 |
| PART EMIS/WT PRD FD TTL | LB/TON | 20.15608 | 21.51230 | 20.83418 |
| PERCENT EXCESS AIR | | 1124.7 | 719.5 | 922.1 |

PLANT: B1BHI
LOCATION: NYC
OPERATOR: ERI

## PARTICULATE SUMMARY IN ENGLISH UNITS

| DESCRIPTION | UNITS | 1 | 2 | AVERAGE |
|---|---|---|---|---|
| DATE OF RUN | | 06-02-73 | 06-02-73 | |
| STACK AREA | FT2 | 1.000 | 1.000 | |
| NET TIME OF RUN | MIN | 56.0 | 56.0 | |
| BAROMETRIC PRESSURE | IN.HG | 30.05 | 30.05 | |
| AVG ORIFICE PRES DROP | IN.H2O | 1.273 | 1.480 | |
| VOL DRY GAS-METER COND | DCF | 32.11 | 35.67 | |
| AVG GAS METER TEMP | DEG.F | 81.3 | 92.7 | |
| VOL DRY GAS-STD COND | DSCF | 31.67 | 34.47 | |
| TOTAL H2O COLLECTED | ML | 36.1 | 32.0 | |
| VOL H2O VAPOR-STD COND | SCF | 1.71 | 1.52 | |
| PERCENT MOISTURE BY VOL | | 5.1 | 4.2 | |
| MOLE FRACTION DRY GAS | | 0.949 | 0.958 | |
| PERCENT CO2 BY VOL, DRY | | 3.2 | 2.2 | |
| PERCENT O2 BY VOL, DRY | | 16.4 | 17.6 | |
| PERCENT CO BY VOL, DRY | | 0.0 | 0.0 | |
| PERCENT N2 BY VOL, DRY | | 80.4 | 80.2 | |
| MOLECULAR WT-DRY STK GAS | | 29.17 | 29.06 | |
| MOLECULAR WT-STK GAS | | 28.60 | 28.59 | |
| AVG STACK TEMPERATURE | DEG.F | 241.0 | 235.0 | |
| NET SAMPLING POINTS | | 1 | 1 | |
| STACK PRESSURE, ABSOLUTE | IN.HG | 30.05 | 30.05 | |
| AVG STACK GAS VELOCITY | FPS | 16.567 | 17.042 | 16.805 |
| STK FLOWRATE, DRY,STD CN | DSCFM | 716. | 750. | 733. |
| ACTUAL STACK FLOWRATE | ACFM | 994. | 1023. | 1008. |
| PERCENT ISOKINETIC | | 103.0 | 107.0 | 105.0 |
| PARTICULATE WT-PARTIAL | MG | 163.00 | 293.50 | 228.25 |
| PARTICULATE WT-TOTAL | MG | 282.30 | 471.40 | 376.85 |
| PERC IMPINGER CATCH | | 42.3 | 37.7 | 40.0 |
| PART. LOAD-PTL,STD CN | GR/DSCF | 0.07925 | 0.13112 | 0.10518 |
| PART. LOAD-TTL,STD CN | GR/DSCF | 0.13725 | 0.21059 | 0.17392 |
| PART. LOAD-PTL,STD CN @ 12% CO2 | | 0.29719 | 0.71518 | 0.50619 |
| PART. LOAD-TTL,STD CN @ 12% CO2 | | 0.51470 | 1.14868 | 0.83169 |
| PART. LOAD-PTL,STK CN | GR/ACF | 0.05705 | 0.09612 | 0.07658 |
| PART. LOAD-TTL,STK CN | GR/ACF | 0.09880 | 0.15437 | 0.12659 |
| PARTIC EMIS-PARTIAL | LB/HR | 0.49 | 0.84 | 0.66 |
| PARTIC EMIS-TOTAL | LB/HR | 0.84 | 1.35 | 1.10 |
| PART EMIS/WT PRD FD PTL | LB/TON | 14.09719 | 27.63571 | 20.86644 |
| PART EMIS/WT PRD FD TTL | LB/TON | 24.41496 | 44.38663 | 34.40079 |
| PERCENT EXCESS AIR | | 339.9 | 492.6 | 416.2 |

PLANT: B2BHI
LOCATION: NYC
OPERATOR: ERI

## PARTICULATE SUMMARY IN ENGLISH UNITS

| DESCRIPTION | UNITS | 1 | 2 | 3 | AVERAGE |
|---|---|---|---|---|---|
| DATE OF RUN | | 05-31-73 | 05-31-73 | 05-31-73 | |
| STACK AREA | FT2 | 1.000 | 1.000 | 1.000 | |
| NET TIME OF RUN | MIN | 49.0 | 56.0 | 56.0 | |
| BAROMETRIC PRESSURE | IN.HG | 29.61 | 29.61 | 29.61 | |
| AVG ORIFICE PRES DROP | IN.H2O | 0.621 | 2.448 | 2.020 | |
| VOL DRY GAS-METER COND | DCF | 22.28 | 43.61 | 42.02 | |
| AVG GAS METER TEMP | DEG.F | 86.3 | 97.2 | 92.6 | |
| VOL DRY GAS-STD COND | DSCF | 21.42 | 41.29 | 40.07 | |
| TOTAL H2O COLLECTED | ML | 16.9 | 48.5 | 48.5 | |
| VOL H2O VAPOR-STD COND | SCF | 0.80 | 2.30 | 2.30 | |
| PERCENT MOISTURE BY VOL | | 3.6 | 5.3 | 5.4 | |
| MOLE FRACTION DRY GAS | | 0.964 | 0.947 | 0.946 | |
| PERCENT CO2 BY VOL, DRY | | 0.7 | 0.7 | 0.7 | |
| PERCENT O2 BY VOL, DRY | | 18.9 | 18.9 | 18.9 | |
| PERCENT CO BY VOL, DRY | | 0.1 | 0.1 | 0.1 | |
| PERCENT N2 BY VOL, DRY | | 80.3 | 80.3 | 80.3 | |
| MOLECULAR WT-DRY STK GAS | | 28.87 | 28.87 | 28.87 | |
| MOLECULAR WT-STK GAS | | 28.48 | 28.29 | 28.28 | |
| AVG STACK TEMPERATURE | DEG.F | 170.0 | 207.0 | 194.0 | |
| NET SAMPLING POINTS | | 1 | 1 | 1 | |
| STACK PRESSURE, ABSOLUTE | IN.HG | 29.61 | 29.61 | 29.61 | |
| AVG STACK GAS VELOCITY | FPS | 24.111 | 21.437 | 19.932 | 21.827 |
| STK FLOWRATE, DRY,STD CN | DSCFM | 1161. | 958. | 907. | 1009. |
| ACTUAL STACK FLOWRATE | ACFM | 1447. | 1286. | 1196. | 1310. |
| PERCENT ISOKINETIC | | 110.5 | 100.4 | 102.9 | 104.6 |
| PARTICULATE WT-PARTIAL | MG | 110.00 | 314.40 | 234.80 | 219.73 |
| PARTICULATE WT-TOTAL | MG | 191.90 | 426.60 | 402.00 | 340.17 |
| PERC IMPINGER CATCH | | 42.7 | 26.3 | 41.6 | 36.9 |
| PART. LOAD-PTL,STD CN | GR/DSCF | 0.07908 | 0.11727 | 0.09024 | 0.09553 |
| PART. LOAD-TTL,STD CN | GR/DSCF | 0.13796 | 0.15912 | 0.15450 | 0.15053 |
| PART. LOAD-PTL,STD CN @ 12% CO2 | | 1.35565 | 2.01031 | 1.54699 | 1.63765 |
| PART. LOAD-TTL,STD CN @ 12% CO2 | | 2.36499 | 2.72773 | 2.64860 | 2.58044 |
| PART. LOAD-PTL,STK CN | GR/ACF | 0.06341 | 0.08728 | 0.06839 | 0.07303 |
| PART. LOAD-TTL,STK CN | GR/ACF | 0.11063 | 0.11843 | 0.11710 | 0.11539 |
| PARTIC EMIS-PARTIAL | LB/HR | 0.79 | 0.96 | 0.70 | 0.82 |
| PARTIC EMIS-TOTAL | LB/HR | 1.37 | 1.31 | 1.20 | 1.29 |
| PART EMIS/WT PRD FD PTL | LB/TON | 34.96880 | 28.74149 | 20.33263 | 28.01430 |
| PART EMIS/WT PRD FD TTL | LB/TON | 61.00462 | 38.99849 | 34.81140 | 44.93816 |
| PERCENT EXCESS AIR | | 802.4 | 802.4 | 802.4 | 802.4 |

PLANT: B3MHI
LOCATION: NYC OPERATOR: FRI

PARTICULATE SUMMARY IN ENGLISH UNITS

| DESCRIPTION | UNITS | 1 | 2 | 3 | AVERAGE |
|---|---|---|---|---|---|
| DATE OF RUN | | 06-28-73 | 06-28-73 | 06-28-73 | |
| STACK AREA | FT2 | 1.000 | 1.000 | 1.000 | |
| NET TIME OF RUN | MIN | 64.0 | 64.0 | 64.0 | |
| BAROMETRIC PRESSURE | IN.HG | 29.86 | 29.86 | 29.82 | |
| AVG ORIFICE PRES DROP | IN.H2O | 5.058 | 2.075 | 1.510 | |
| VOL DRY GAS-METER COND | DCF | 33.95 | 47.50 | 43.49 | |
| AVG GAS METER TEMP | DEG.F | 100.1 | 106.5 | 102.2 | |
| VOL DRY GAS-STD COND | DSCF | 32.45 | 44.57 | 41.01 | |
| TOTAL H2O COLLECTED | ML | 32.0 | 49.5 | 33.3 | |
| VOL H2O VAPOR-STD COND | SCF | 1.52 | 2.35 | 1.58 | |
| PERCENT MOISTURE BY VOL | | 4.5 | 5.0 | 3.7 | |
| MOLE FRACTION DRY GAS | | 0.955 | 0.950 | 0.963 | |
| PERCENT CO2 BY VOL, DRY | | 1.3 | 1.7 | 1.6 | |
| PERCENT O2 BY VOL, DRY | | 19.5 | 18.8 | 18.7 | |
| PERCENT CO BY VOL, DRY | | 0.1 | 0.0 | 0.0 | |
| PERCENT N2 BY VOL, DRY | | 79.1 | 79.5 | 79.7 | |
| MOLECULAR WT-DRY STK GAS | | 28.99 | 29.02 | 29.00 | |
| MOLECULAR WT-STK GAS | | 28.50 | 28.47 | 28.60 | |
| AVG STACK TEMPERATURE | DEG.F | 192.0 | 228.0 | 187.0 | |
| NET SAMPLING POINTS | | 1 | 1 | 1 | |
| STACK PRESSURE, ABSOLUTE | IN.HG | 29.86 | 29.86 | 29.82 | |
| AVG STACK GAS VELOCITY | FPS | 15.107 | 22.676 | 17.987 | 18.590 |
| STK FLOWRATE, DRY,STD CN | DSCFM | 702. | 993. | 848. | 848. |
| ACTUAL STACK FLOWRATE | ACFM | 906. | 1361. | 1079. | 1115. |
| PERCENT ISOKINETIC | | 94.1 | 91.4 | 98.5 | 94.7 |
| PARTICULATE WT-PARTIAL | MG | 150.70 | 198.60 | 356.20 | 235.17 |
| PARTICULATE WT-TOTAL | MG | 268.80 | 380.50 | 492.60 | 380.63 |
| PERC IMPINGER CATCH | | 43.9 | 47.8 | 27.7 | 39.8 |
| PART. LOAD-PTL,STD CN | GR/DSCF | 0.07151 | 0.06863 | 0.13376 | 0.09130 |
| PART. LOAD-TTL,STD CN | GR/DSCF | 0.12755 | 0.13148 | 0.18499 | 0.14801 |
| PART. LOAD-PTL,STD CN @ 12% CO2 | | 0.66009 | 0.48441 | 1.00324 | 0.71591 |
| PART. LOAD-TTL,STD CN @ 12% CO2 | | 1.17739 | 0.92809 | 1.38741 | 1.16430 |
| PART. LOAD-PTL,STK CN | GR/ACF | 0.05538 | 0.05008 | 0.10508 | 0.07018 |
| PART. LOAD-TTL,STK CN | GR/ACF | 0.09878 | 0.09595 | 0.14532 | 0.11335 |
| PARTIC EMIS-PARTIAL | LB/HR | 0.43 | 0.58 | 0.97 | 0.66 |
| PARTIC EMIS-TOTAL | LB/HR | 0.77 | 1.12 | 1.35 | 1.08 |
| PART EMIS/UT PRD FD PTL | LB/TON | 11.32873 | 14.79440 | 38.14012 | 21.42108 |
| PART EMIS/UT PRD FD TTL | LB/TON | 20.20679 | 28.34476 | 52.74518 | 33.76556 |
| PERCENT EXCESS AIR | | 1357.9 | 859.2 | 798.9 | 1005.3 |

PLANT: B4MPI
LOCATION: NYC
OPERATOR: ERI

## PARTICULATE SUMMARY IN ENGLISH UNITS

| DESCRIPTION | UNITS | 1 | 4 | AVERAGE |
|---|---|---|---|---|
| DATE OF RUN | | 05-30-73 | 05-30-73 | |
| STACK AREA | FT2 | 1.000 | 1.000 | |
| NET TIME OF RUN | MIN | 56.0 | 56.0 | |
| BAROMETRIC PRESSURE | IN.HG | 29.60 | 29.58 | |
| AVG ORIFICE PRES DROP | IN.H2O | 6.950 | 4.250 | |
| VOL DRY GAS-METER COND | DCF | 77.39 | 62.50 | |
| AVG GAS METER TEMP | DEG.F | 114.5 | 113.4 | |
| VOL DRY GAS-STD COND | DSCF | 71.83 | 57.70 | |
| TOTAL H2O COLLECTED | ML | 71.0 | 77.4 | |
| VOL H2O VAPOR-STD COND | SCF | 3.37 | 3.67 | |
| PERCENT MOISTURE BY VOL | | 4.5 | 6.0 | |
| MOLE FRACTION DRY GAS | | 0.955 | 0.940 | |
| PERCENT CO2 BY VOL, DRY | | 1.8 | 1.8 | |
| PERCENT O2 BY VOL, DRY | | 17.6 | 17.6 | |
| PERCENT CO BY VOL, DRY | | 0.1 | 0.1 | |
| PERCENT N2 BY VOL, DRY | | 80.5 | 80.5 | |
| MOLECULAR WT-DRY STK GAS | | 28.99 | 28.99 | |
| MOLECULAR WT-STK GAS | | 28.50 | 28.33 | |
| AVG STACK TEMPERATURE | DEG.F | 132.0 | 169.0 | |
| NET SAMPLING POINTS | | 1 | 1 | |
| STACK PRESSURE, ABSOLUTE | IN.HG | 29.60 | 29.58 | |
| AVG STACK GAS VELOCITY | FPS | 20.723 | 28.744 | 24.733 |
| STK FLOWRATE, DRY,STD CN | DSCFM | 1052. | 1350. | 1201. |
| ACTUAL STACK FLOWRATE | ACFM | 1243. | 1725. | 1484. |
| PERCENT ISOKINETIC | | 89.5 | 99.5 | 94.5 |
| PARTICULATE WT-PARTIAL | MG | 155.40 | 74.70 | 115.05 |
| PARTICULATE WT-TOTAL | MG | 230.00 | 143.00 | 186.50 |
| PERC IMPINGER CATCH | | 32.4 | 47.8 | 40.1 |
| PART. LOAD-PTL,STD CN | GR/DSCF | 0.03332 | 0.01994 | 0.02663 |
| PART. LOAD-TTL,STD CN | GR/DSCF | 0.04931 | 0.03816 | 0.04374 |
| PART. LOAD-PTL,STD CN @ 12% CO2 | | 0.22210 | 0.13291 | 0.17750 |
| PART. LOAD-TTL,STD CN @ 12% CO2 | | 0.32872 | 0.25443 | 0.29157 |
| PART. LOAD-PTL,STK CN | GR/ACF | 0.02816 | 0.01560 | 0.02188 |
| PART. LOAD-TTL,STK CN | GR/ACF | 0.04168 | 0.02987 | 0.03578 |
| PARTIC EMIS-PARTIAL | LB/HR | 0.30 | 0.23 | 0.27 |
| PARTIC EMIS-TOTAL | LB/HR | 0.44 | 0.44 | 0.44 |
| PART EMIS/WT PRD FD PTL | LB/TON | 8.58102 | 4.12098 | 6.35100 |
| PART EMIS/WT PRD FD TTL | LB/TON | 12.70035 | 7.88890 | 10.29462 |
| PERCENT EXCESS AIR | | 474.1 | 474.1 | 474.1 |

PLANT: BSPHI
LOCATION: NYC
OPERATOR: ERI

PARTICULATE SUMMARY IN ENGLISH UNITS

| DESCRIPTION | UNITS | 1 | 2 | 3 | AVERAGE |
|---|---|---|---|---|---|
| DATE OF RUN | | 06-07-73 | 06-07-73 | 06-07-73 | |
| STACK AREA | FT2 | 1.000 | 1.000 | 1.000 | |
| NET TIME OF RUN | MIN | 64.0 | 64.0 | 64.0 | |
| BAROMETRIC PRESSURE | IN.HG | 29.90 | 29.90 | 29.90 | |
| AVG ORIFICE PRES DROP | IN.H2O | 3.225 | 4.108 | 5.844 | |
| VOL DRY GAS-METER COND | DCF | 59.10 | 65.72 | 77.85 | |
| AVG GAS METER TEMP | DEG.F | 95.5 | 100.2 | 103.6 | |
| VOL DRY GAS-STD COND | DSCF | 56.79 | 62.75 | 74.19 | |
| TOTAL H2O COLLECTED | ML | 52.5 | 89.7 | 92.0 | |
| VOL H2O VAPOR-STD COND | SCF | 2.49 | 4.25 | 4.36 | |
| PERCENT MOISTURE BY VOL | | 4.2 | 6.3 | 5.6 | |
| MOLE FRACTION DRY GAS | | 0.958 | 0.937 | 0.944 | |
| PERCENT CO2 BY VOL, DRY | | 1.4 | 2.4 | 1.5 | |
| PERCENT O2 BY VOL, DRY | | 18.7 | 17.4 | 18.2 | |
| PERCENT CO BY VOL, DRY | | 0.2 | 0.2 | 0.2 | |
| PERCENT N2 BY VOL, DRY | | 79.7 | 80.0 | 80.1 | |
| MOLECULAR WT-DRY STK GAS | | 28.97 | 29.08 | 28.97 | |
| MOLECULAR WT-STK GAS | | 28.51 | 28.38 | 28.36 | |
| AVG STACK TEMPERATURE | DEG.F | 281.0 | 331.0 | 370.0 | |
| NET SAMPLING POINTS | | 1 | 1 | 1 | |
| STACK PRESSURE, ABSOLUTE | IN.HG | 29.90 | 29.90 | 29.90 | |
| AVG STACK GAS VELOCITY | FPS | 30.011 | 34.376 | 44.339 | 36.442 |
| STK FLOWRATE, DRY,STD CN | DSCFM | 1233. | 1316. | 1603. | 1384. |
| ACTUAL STACK FLOWRATE | ACFM | 1801. | 2099. | 2660. | 2187. |
| PERCENT ISOKINETIC | | 93.9 | 97.2 | 94.3 | 95.1 |
| PARTICULATE WT-PARTIAL | MG | 173.80 | 207.30 | 413.30 | 264.80 |
| PARTICULATE WT-TOTAL | MG | 358.50 | 511.20 | 824.90 | 564.87 |
| PERC IMPINGER CATCH | | 51.5 | 59.4 | 49.9 | 53.6 |
| PART. LOAD-PTL,STD CN | GR/DSCF | 0.04713 | 0.05088 | 0.08579 | 0.06127 |
| PART. LOAD-TTL,STD CN | GR/DSCF | 0.09722 | 0.12546 | 0.17123 | 0.13131 |
| PART. LOAD-PTL,STD CN @ 12% CO2 | | 0.40400 | 0.25438 | 0.68634 | 0.44824 |
| PART. LOAD-TTL,STD CN @ 12% CO2 | | 0.83333 | 0.62731 | 1.36986 | 0.94350 |
| PART. LOAD-PTL,STK CN | GR/ACF | 0.03225 | 0.03188 | 0.05167 | 0.03860 |
| PART. LOAD-TTL,STK CN | GR/ACF | 0.06652 | 0.07861 | 0.10312 | 0.08275 |
| PARTIC EMIS-PARTIAL | LB/HR | 0.50 | 0.57 | 1.18 | 0.75 |
| PARTIC EMIS-TOTAL | LB/HR | 1.03 | 1.41 | 2.35 | 1.60 |
| PART EMIS/WT PRD FD PTL | LB/TON | 30.18433 | 10.62540 | 22.03433 | 20.94803 |
| PART EMIS/WT PRD FD TTL | LB/TON | 62.26169 | 26.20227 | 43.97803 | 44.14731 |
| PERCENT EXCESS AIR | | 762.0 | 452.9 | 594.1 | 603.0 |

PLANT: C1MPI
LOCATION: NYC
OPERATOR: ERI

PARTICULATE SUMMARY IN ENGLISH UNITS

| DESCRIPTION | UNITS | 1 | 2 | 3 | AVERAGE |
|---|---|---|---|---|---|
| DATE OF RUN | | 05-23-73 | 05-23-73 | 05-23-73 | |
| STACK AREA | FT2 | 1.000 | 1.000 | 1.000 | |
| NET TIME OF RUN | MIN | 48.0 | 48.0 | 48.0 | |
| BAROMETRIC PRESSURE | IN.HG | 29.66 | 29.66 | 29.66 | |
| AVG ORIFICE PRES DROP | IN.H2O | 3.362 | 1.868 | 1.848 | |
| VOL DRY GAS-METER COND | DCF | 44.11 | 31.28 | 39.91 | |
| AVG GAS METER TEMP | DEG.F | 98.0 | 99.3 | 103.8 | |
| VOL DRY GAS-STD COND | DSCF | 41.87 | 29.52 | 37.35 | |
| TOTAL H2O COLLECTED | ML | 30.0 | 39.0 | 23.2 | |
| VOL H2O VAPOR-STD COND | SCF | 1.42 | 1.85 | 1.10 | |
| PERCENT MOISTURE BY VOL | | 3.3 | 5.9 | 2.9 | |
| MOLE FRACTION DRY GAS | | 0.967 | 0.941 | 0.971 | |
| PERCENT CO2 BY VOL, DRY | | 1.4 | 1.4 | 1.4 | |
| PERCENT O2 BY VOL, DRY | | 19.2 | 19.2 | 19.2 | |
| PERCENT CO BY VOL, DRY | | 0.0 | 0.0 | 0.0 | |
| PERCENT N2 BY VOL, DRY | | 79.4 | 79.4 | 79.4 | |
| MOLECULAR WT-DRY STK GAS | | 28.99 | 28.99 | 28.99 | |
| MOLECULAR WT-STK GAS | | 28.63 | 28.34 | 28.68 | |
| AVG STACK TEMPERATURE | DEG.F | 218.0 | 188.0 | 197.0 | |
| NET SAMPLING POINTS | | 1 | 1 | 1 | |
| STACK PRESSURE, ABSOLUTE | IN.HG | 29.66 | 29.66 | 29.66 | |
| AVG STACK GAS VELOCITY | FPS | 14.900 | 10.673 | 11.430 | 12.334 |
| STK FLOWRATE, DRY,STD CN | DSCFM | 670. | 488. | 533. | 564. |
| ACTUAL STACK FLOWRATE | ACFM | 894. | 640. | 686. | 740. |
| PERCENT ISOKINETIC | | 95.5 | 92.3 | 107.2 | 98.3 |
| PARTICULATE WT-PARTIAL | MG | 323.80 | 161.80 | 119.50 | 201.70 |
| PARTICULATE WT-TOTAL | MG | 488.90 | 369.00 | 204.40 | 354.10 |
| PERC IMPINGER CATCH | | 33.8 | 56.2 | 41.5 | 43.8 |
| PART. LOAD-PTL,STD CN | GR/DSCF | 0.11911 | 0.08442 | 0.04927 | 0.08427 |
| PART. LOAD-TTL,STD CN | GR/DSCF | 0.17984 | 0.19253 | 0.08427 | 0.15221 |
| PART. LOAD-PTL,STD CN @ 12% CO2 | | 1.02092 | 0.72360 | 0.42229 | 0.72227 |
| PART. LOAD-TTL,STD CN @ 12% CO2 | | 1.54148 | 1.65024 | 0.72232 | 1.30468 |
| PART. LOAD-PTL,STK CN | GR/ACF | 0.08920 | 0.06436 | 0.03824 | 0.06393 |
| PART. LOAD-TTL,STK CN | GR/ACF | 0.13468 | 0.14678 | 0.06541 | 0.11562 |
| PARTIC EMIS-PARTIAL | LB/HR | 0.68 | 0.35 | 0.22 | 0.42 |
| PARTIC EMIS-TOTAL | LB/HR | 1.03 | 0.81 | 0.38 | 0.74 |
| PART EMIS/WT PRD FD PTL | LB/TON | 32.56665 | 13.33874 | 9.99677 | 18.63405 |
| PART EMIS/WT PRD FD TTL | LB/TON | 49.17180 | 30.42023 | 17.09906 | 32.23035 |
| PERCENT EXCESS AIR | | 1089.9 | 1089.9 | 1089.9 | 1089.9 |

PLANT: B5PHI
LOCATION: NYC
OPERATOR: ERI

PARTICULATE SUMMARY IN ENGLISH UNITS

| DESCRIPTION | UNITS | 1 | 2 | 3 | AVERAGE |
|---|---|---|---|---|---|
| DATE OF RUN | | 06-07-73 | 06-07-73 | 06-07-73 | |
| STACK AREA | FT2 | 1.000 | 1.000 | 1.000 | |
| NET TIME OF RUN | MIN | 64.0 | 64.0 | 64.0 | |
| BAROMETRIC PRESSURE | IN.HG | 29.90 | 29.90 | 29.90 | |
| AVG ORIFICE PRES DROP | IN.H2O | 3.225 | 4.108 | 5.844 | |
| VOL DRY GAS-METER COND | DCF | 59.10 | 65.72 | 77.85 | |
| AVG GAS METER TEMP | DEG.F | 95.5 | 100.2 | 103.6 | |
| VOL DRY GAS-STD COND | DSCF | 56.79 | 62.75 | 74.19 | |
| TOTAL H2O COLLECTED | ML | 52.5 | 89.7 | 92.0 | |
| VOL H2O VAPOR-STD COND | SCF | 2.49 | 4.25 | 4.36 | |
| PERCENT MOISTURE BY VOL | | 4.2 | 6.3 | 5.6 | |
| MOLE FRACTION DRY GAS | | 0.958 | 0.937 | 0.944 | |
| PERCENT CO2 BY VOL, DRY | | 1.4 | 2.4 | 1.5 | |
| PERCENT O2 BY VOL, DRY | | 18.7 | 17.4 | 18.2 | |
| PERCENT CO BY VOL, DRY | | 0.2 | 0.2 | 0.2 | |
| PERCENT N2 BY VOL, DRY | | 79.7 | 80.0 | 80.1 | |
| MOLECULAR WT-DRY STK GAS | | 28.97 | 29.08 | 28.97 | |
| MOLECULAR WT-STK GAS | | 28.51 | 28.38 | 28.36 | |
| AVG STACK TEMPERATURE | DEG.F | 281.0 | 331.0 | 370.0 | |
| NET SAMPLING POINTS | | 1 | 1 | 1 | |
| STACK PRESSURE, ABSOLUTE | IN.HG | 29.90 | 29.90 | 29.90 | |
| AVG STACK GAS VELOCITY | FPS | 30.011 | 34.976 | 44.339 | 36.442 |
| STK FLOWRATE, DRY,STD CN | DSCFM | 1233. | 1316. | 1603. | 1384. |
| ACTUAL STACK FLOWRATE | ACFM | 1801. | 2099. | 2660. | 2187. |
| PERCENT ISOKINETIC | | 93.9 | 97.2 | 94.3 | 95.1 |
| PARTICULATE WT-PARTIAL | MG | 173.80 | 207.30 | 413.30 | 264.80 |
| PARTICULATE WT-TOTAL | MG | 358.50 | 511.20 | 824.90 | 564.87 |
| PERC IMPINGER CATCH | | 51.5 | 59.4 | 49.9 | 53.6 |
| PART. LOAD-PTL,STD CN | GR/DSCF | 0.04713 | 0.05088 | 0.08579 | 0.06127 |
| PART. LOAD-TTL,STD CN | GR/DSCF | 0.09722 | 0.12546 | 0.17123 | 0.13131 |
| PART. LOAD-PTL,STD CN @ 12% CO2 | | 0.40400 | 0.25438 | 0.68634 | 0.44824 |
| PART. LOAD-TTL,STD CN @ 12% CO2 | | 0.83333 | 0.62731 | 1.36986 | 0.94350 |
| PART. LOAD-PTL,STK CN | GR/ACF | 0.03225 | 0.03188 | 0.05167 | 0.03860 |
| PART. LOAD-TTL,STK CN | GR/ACF | 0.06652 | 0.07861 | 0.10312 | 0.08275 |
| PARTIC EMIS-PARTIAL | LB/HR | 0.50 | 0.57 | 1.18 | 0.75 |
| PARTIC EMIS-TOTAL | LB/HR | 1.03 | 1.41 | 2.35 | 1.60 |
| PART EMIS/WT PRD FD PTL | LB/TON | 30.18433 | 10.62540 | 22.03433 | 20.94803 |
| PART EMIS/WT PRD FD TTL | LB/TON | 62.26169 | 26.20227 | 43.97803 | 44.14731 |
| PERCENT EXCESS AIR | | 762.0 | 452.9 | 594.1 | 603.0 |

PLANT: C3MP1
LOCATION: NYC
OPERATOR: ERI

PARTICULATE SUMMARY IN ENGLISH UNITS

| DESCRIPTION | UNITS | 1 | 2 | 3 | AVERAGE |
|---|---|---|---|---|---|
| DATE OF RUN | | 05-24-73 | 05-24-73 | 05-24-73 | |
| STACK AREA | FT2 | 1.000 | 1.000 | 1.000 | |
| NET TIME OF RUN | MIN | 56.0 | 56.0 | 56.0 | |
| BAROMETRIC PRESSURE | IN.HG | 29.63 | 29.63 | 29.63 | |
| AVG ORIFICE PRES DROP | IN.H2O | 2.493 | 1.640 | 1.601 | |
| VOL DRY GAS-METER COND | DCF | 44.48 | 34.85 | 36.57 | |
| AVG GAS METER TEMP | DEG.F | 86.3 | 85.7 | 90.5 | |
| VOL DRY GAS-STD COND | DSCF | 42.99 | 33.65 | 35.00 | |
| TOTAL H2O COLLECTED | ML | 22.4 | 21.3 | 45.5 | |
| VOL H2O VAPOR-STD COND | SCF | 1.06 | 1.01 | 2.16 | |
| PERCENT MOISTURE BY VOL | | 2.4 | 2.9 | 5.8 | |
| MOLE FRACTION DRY GAS | | 0.976 | 0.971 | 0.942 | |
| PERCENT CO2 BY VOL, DRY | | 0.1 | 0.0 | 0.0 | |
| PERCENT O2 BY VOL, DRY | | 20.2 | 20.3 | 20.3 | |
| PERCENT CO BY VOL, DRY | | 0.0 | 0.0 | 0.0 | |
| PERCENT N2 BY VOL, DRY | | 79.7 | 79.7 | 79.7 | |
| MOLECULAR WT-DRY STK GAS | | 28.82 | 28.81 | 28.81 | |
| MOLECULAR WT-STK GAS | | 28.56 | 28.50 | 28.18 | |
| AVG STACK TEMPERATURE | DEG.F | 100.0 | 157.0 | 173.0 | |
| NET SAMPLING POINTS | | 1 | 1 | 1 | |
| STACK PRESSURE, ABSOLUTE | IN.HG | 29.63 | 29.63 | 29.63 | |
| AVG STACK GAS VELOCITY | FPS | 11.107 | 16.370 | 17.273 | 14.917 |
| STK FLOWRATE, DRY,STD CN | DSCFM | 609. | 811. | 809. | 743. |
| ACTUAL STACK FLOWRATE | ACFM | 666. | 982. | 1036. | 895. |
| PERCENT ISOKINETIC | | 92.4 | 96.6 | 100.7 | 96.6 |
| PARTICULATE WT-PARTIAL | MG | 179.80 | 193.90 | 339.90 | 237.87 |
| PARTICULATE WT-TOTAL | MG | 363.90 | 293.50 | 513.60 | 390.33 |
| PERC IMPINGER CATCH | | 50.6 | 33.9 | 33.8 | 39.4 |
| PART. LOAD-PTL,STD CN | GR/DSCF | 0.06441 | 0.08875 | 0.14955 | 0.10090 |
| PART. LOAD-TTL,STD CN | GR/DSCF | 0.13037 | 0.13433 | 0.22598 | 0.16356 |
| PART. LOAD-PTL,STD CN @ 12% CO2 | | 7.72909********** | | | |
| PART. LOAD-TTL,STD CN @ 12% CO2 | | 15.64423********** | | | |
| PART. LOAD-PTL,STK CN | GR/ACF | 0.05887 | 0.07324 | 0.11672 | 0.08294 |
| PART. LOAD-TTL,STK CN | GR/ACF | 0.11915 | 0.11086 | 0.17636 | 0.13546 |
| PARTIC EMIS-PARTIAL | LB/HR | 0.34 | 0.62 | 1.04 | 0.66 |
| PARTIC EMIS-TOTAL | LB/HR | 0.68 | 0.93 | 1.57 | 1.06 |
| PART EMIS/WT PRD FD PTL | LB/TON | 19.22636 | 17.62706 | 24.70020 | 20.51787 |
| PART EMIS/WT PRD FD TTL | LB/TON | 38.91255 | 26.68150 | 37.32286 | 34.30562 |
| PERCENT EXCESS AIR | | 2402.5********** | | | |

PLANT: C4BPI
LOCATION: NYC
OPERATOR: ERI

PARTICULATE SUMMARY IN ENGLISH UNITS

| DESCRIPTION | UNITS | 1 | 2 | AVERAGE |
|---|---|---|---|---|
| DATE OF RUN | | 06-19-73 | 06-19-73 | |
| STACK AREA | FT2 | 1.000 | 1.000 | |
| NET TIME OF RUN | MIN | 64.0 | 64.0 | |
| BAROMETRIC PRESSURE | IN.HG | 29.86 | 29.84 | |
| AVG ORIFICE PRES DROP | IN.H2O | 0.595 | 0.618 | |
| VOL DRY GAS-METER COND | DCF | 27.16 | 28.06 | |
| AVG GAS METER TEMP | DEG.F | 83.8 | 86.4 | |
| VOL DRY GAS-STD COND | DSCF | 26.45 | 27.18 | |
| TOTAL H2O COLLECTED | ML | 33.0 | 22.9 | |
| VOL H2O VAPOR-STD COND | SCF | 1.56 | 1.08 | |
| PERCENT MOISTURE BY VOL | | 5.6 | 3.8 | |
| MOLE FRACTION DRY GAS | | 0.944 | 0.962 | |
| PERCENT CO2 BY VOL, DRY | | 1.3 | 1.3 | |
| PERCENT O2 BY VOL, DRY | | 19.4 | 19.4 | |
| PERCENT CO BY VOL, DRY | | 0.1 | 0.1 | |
| PERCENT N2 BY VOL, DRY | | 79.2 | 79.2 | |
| MOLECULAR WT-DRY STK GAS | | 28.98 | 28.98 | |
| MOLECULAR WT-STK GAS | | 28.37 | 28.56 | |
| AVG STACK TEMPERATURE | DEG.F | 185.0 | 139.0 | |
| NET SAMPLING POINTS | | 1 | 1 | |
| STACK PRESSURE, ABSOLUTE | IN.HG | 29.86 | 29.84 | |
| AVG STACK GAS VELOCITY | FPS | 12.764 | 10.582 | 11.673 |
| STK FLOWRATE, DRY,STD CN | DSCFM | 593. | 539. | 566. |
| ACTUAL STACK FLOWRATE | ACFM | 766. | 635. | 700. |
| PERCENT ISOKINETIC | | 90.9 | 102.8 | 96.9 |
| PARTICULATE WT-PARTIAL | MG | 252.10 | 241.20 | 246.65 |
| PARTICULATE WT-TOTAL | MG | 344.10 | 324.10 | 334.10 |
| PERC IMPINGER CATCH | | 26.7 | 25.6 | 26.2 |
| PART. LOAD-PTL,STD CN | GR/DSCF | 0.14678 | 0.13007 | 0.14173 |
| PART. LOAD-TTL,STD CN | GR/DSCF | 0.20035 | 0.18364 | 0.19200 |
| PART. LOAD-PTL,STD CN @ 12% CO2 | | 1.35491 | 1.20156 | 1.30824 |
| PART. LOAD-TTL,STD CN @ 12% CO2 | | 1.84937 | 1.69516 | 1.77227 |
| PART. LOAD-PTL,STK CN | GR/ACF | 0.11356 | 0.11588 | 0.11472 |
| PART. LOAD-TTL,STK CN | GR/ACF | 0.15500 | 0.15571 | 0.15536 |
| PARTIC EMIS-PARTIAL | LB/HR | 0.75 | 0.63 | 0.69 |
| PARTIC EMIS-TOTAL | LB/HR | 1.02 | 0.85 | 0.93 |
| PART EMIS/WT PRD FD PTL | LB/TON | 64.85725 | 33.21208 | 49.03465 |
| PART EMIS/WT PRD FD TTL | LB/TON | 88.52592 | 44.62704 | 66.57648 |
| PERCENT EXCESS AIR | | 1241.3 | 1241.3 | 1241.3 |

PLANT: C48PI...CONTINUED
LOCATION: NYC
OPERATOR: ERI

PARTICULATE SUMMARY IN ENGLISH UNITS

| DESCRIPTION | UNITS | 3 | 4 | AVERAGE |
|---|---|---|---|---|
| DATE OF RUN | | 06-19-73 | 06-19-73 | |
| STACK AREA | FT2 | 1.000 | 1.000 | |
| NET TIME OF RUN | MIN | 80.0 | 80.0 | |
| BAROMETRIC PRESSURE | IN.HG | 29.67 | 29.67 | |
| AVG ORIFICE PRES DROP | IN.H2O | 0.734 | 0.930 | |
| VOL DRY GAS-METER COND | DCF | 38.41 | 41.40 | |
| AVG GAS METER TEMP | DEG.F | 91.8 | 93.1 | |
| VOL DRY GAS-STD COND | DSCF | 36.64 | 39.42 | |
| TOTAL H2O COLLECTED | ML | 33.5 | 40.9 | |
| VOL H2O VAPOR-STD COND | SCF | 1.59 | 1.94 | |
| PERCENT MOISTURE BY VOL | | 4.2 | 4.7 | |
| MOLE FRACTION DRY GAS | | 0.958 | 0.953 | |
| PERCENT CO2 BY VOL, DRY | | 1.3 | 1.2 | |
| PERCENT O2 BY VOL, DRY | | 19.4 | 19.6 | |
| PERCENT CO BY VOL, DRY | | 0.1 | 0.0 | |
| PERCENT N2 BY VOL, DRY | | 79.2 | 79.2 | |
| MOLECULAR WT-DRY STK GAS | | 28.98 | 28.98 | |
| MOLECULAR WT-STK GAS | | 28.53 | 28.46 | |
| AVG STACK TEMPERATURE | DEG.F | 185.0 | 212.0 | |
| NET SAMPLING POINTS | | 1 | 1 | |
| STACK PRESSURE, ABSOLUTE | IN.HG | 29.67 | 29.67 | |
| AVG STACK GAS VELOCITY | FPS | 12.709 | 14.552 | 13.661 |
| STK FLOWRATE, DRY,STD CN | DSCFM | 598. | 651. | 624. |
| ACTUAL STACK FLOWRATE | ACFM | 766. | 873. | 820. |
| PERCENT ISOKINETIC | | 99.8 | 98.7 | 99.3 |
| PARTICULATE WT-PARTIAL | MG | 138.10 | 143.20 | 140.65 |
| PARTICULATE WT-TOTAL | MG | 226.30 | 268.40 | 247.35 |
| PERC IMPINGER CATCH | | 39.0 | 46.6 | 42.8 |
| PART. LOAD-PTL,STD CN | GR/DSCF | 0.05804 | 0.05595 | 0.05699 |
| PART. LOAD-TTL,STD CN | GR/DSCF | 0.09510 | 0.10486 | 0.09998 |
| PART. LOAD-PTL,STD CN @ 12% CO2 | | 0.53573 | 0.55948 | 0.54760 |
| PART. LOAD-TTL,STD CN @ 12% CO2 | | 0.87788 | 1.04863 | 0.96326 |
| PART. LOAD-PTL,STK CN | GR/ACF | 0.04529 | 0.04167 | 0.04348 |
| PART. LOAD-TTL,STK CN | GR/ACF | 0.07422 | 0.07811 | 0.07616 |
| PARTIC EMIS-PARTIAL | LB/HR | 0.30 | 0.31 | 0.30 |
| PARTIC EMIS-TOTAL | LB/HR | 0.49 | 0.58 | 0.54 |
| PART EMIS/WT PRD FD PTL | LB/TON | 10.44212 | 10.26482 | 10.35347 |
| PART EMIS/WT PRD FD TTL | LB/TON | 17.11110 | 19.23935 | 18.17525 |
| PERCENT EXCESS AIR | | 1241.3 | 1497.6 | 1369.5 |

PLANT: CSMPI
LOCATION: NYC
OPERATOR: ERI

PARTICULATE SUMMARY IN ENGLISH UNITS

| DESCRIPTION | UNITS | 1 | 2 | 3 | AVERAGE |
|---|---|---|---|---|---|
| DATE OF RUN | | 05-18-73 | 05-18-73 | 05-18-73 | |
| STACK AREA | FT2 | 1.000 | 1.000 | 1.000 | |
| NET TIME OF RUN | MIN | 48.0 | 48.0 | 48.0 | |
| BAROMETRIC PRESSURE | IN.HG | 29.54 | 29.57 | 29.59 | |
| AVG ORIFICE PRES DROP | IN.H2O | 2.080 | 2.385 | 2.250 | |
| VOL DRY GAS-METER COND | DCF | 38.53 | 37.30 | 37.49 | |
| AVG GAS METER TEMP | DEG.F | 94.9 | 97.3 | 93.9 | |
| VOL DRY GAS-STD COND | DSCF | 36.51 | 35.26 | 35.67 | |
| TOTAL H2O COLLECTED | ML | 133.0 | 12.6. | 12.0 | |
| VOL H2O VAPOR-STD COND | SCF | 6.30 | 0.60 | 0.57 | |
| PERCENT MOISTURE BY VOL | | 14.7 | 1.7 | 1.6 | |
| MOLE FRACTION DRY GAS | | 0.853 | 0.983 | 0.984 | |
| PERCENT CO2 BY VOL, DRY | | 1.2 | 1.1 | 1.1 | |
| PERCENT O2 BY VOL, DRY | | 19.2 | 19.1 | 19.2 | |
| PERCENT CO BY VOL, DRY | | 0.1 | 0.1 | 0.1 | |
| PERCENT N2 BY VOL, DRY | | 79.5 | 79.7 | 79.6 | |
| MOLECULAR WT-DRY STK GAS | | 28.96 | 28.94 | 28.94 | |
| MOLECULAR WT-STK GAS | | 27.35 | 28.76 | 28.77 | |
| AVG STACK TEMPERATURE | DEG.F | 115.0 | 118.0 | 112.0 | |
| NET SAMPLING POINTS | | 1 | 1 | 1 | |
| STACK PRESSURE, ABSOLUTE | IN.HG | 29.54 | 29.57 | 29.59 | |
| AVG STACK GAS VELOCITY | FPS | 19.562 | 18.181 | 16.400 | 18.048 |
| STK FLOWRATE, DRY,STD CN | DSCFM | 911. | 972. | 887. | 923. |
| ACTUAL STACK FLOWRATE | ACFM | 1174. | 1091. | 984. | 1083. |
| PERCENT ISOKINETIC | | 108.9 | 98.6 | 109.2 | 105.6 |
| PARTICULATE WT-PARTIAL | MG | 49.10 | 56.30 | 71.90 | 59.10 |
| PARTICULATE WT-TOTAL | MG | 150.50 | 143.30 | 177.60 | 157.13 |
| PERC IMPINGER CATCH | | 67.4 | 60.7 | 59.5 | 62.5 |
| PART. LOAD-PTL,STD CN | GR/DSCF | 0.02071 | 0.02459 | 0.03104 | 0.02545 |
| PART. LOAD-TTL,STD CN | GR/DSCF | 0.06348 | 0.06259 | 0.07668 | 0.06758 |
| PART. LOAD-PTL,STD CN @ 12% CO2 | | 0.20710 | 0.26825 | 0.33865 | 0.27133 |
| PART. LOAD-TTL,STD CN @ 12% CO2 | | 0.63480 | 0.68278 | 0.83649 | 0.71802 |
| PART. LOAD-PTL,STK CN | GR/ACF | 0.01606 | 0.02190 | 0.02798 | 0.02198 |
| PART. LOAD-TTL,STK CN | GR/ACF | 0.04922 | 0.05573 | 0.06911 | 0.05802 |
| PARTIC EMIS-PARTIAL | LB/HR | 0.16 | 0.20 | 0.24 | 0.20 |
| PARTIC EMIS-TOTAL | LB/HR | 0.50 | 0.52 | 0.58 | 0.53 |
| PART EMIS/WT PRD FD PTL | LB/TON | 11.14846 | 9.31128 | 8.44426 | 9.96800 |
| PART EMIS/WT PRD FD TTL | LB/TON | 34.17192 | 23.69992 | 23.32823 | 27.06668 |
| PERCENT EXCESS AIR | | 1041.9 | 956.9 | 1027.1 | 1008.6 |

PLANT: CORPI
LOCATION: NYC
OPERATOR: FRI

PARTICULATE SUMMARY IN ENGLISH UNITS

| DESCRIPTION | UNITS | 1 | 2 | 3 | AVERAGE |
|---|---|---|---|---|---|
| DATE OF RUN | | 06-21-73 | 06-21-73 | 06-21-73 | |
| STACK AREA | FT2 | 1.000 | 1.000 | 1.000 | |
| NET TIME OF RUN | MIN | 64.0 | 64.0 | 64.0 | |
| BAROMETRIC PRESSURE | IN.HG | 29.56 | 29.54 | 29.50 | |
| AVG ORIFICE PRES DROP | IN.H2O | 1.001 | 0.880 | 0.860 | |
| VOL DRY GAS-METER COND | DCF | 35.32 | 33.59 | 32.59 | |
| AVG GAS METER TEMP | DEG.F | 97.7 | 100.6 | 92.3 | |
| VOL DRY GAS-STD COND | DSCF | 33.24 | 31.41 | 30.90 | |
| TOTAL H2O COLLECTED | ML | 32.0 | 32.0 | 36.0 | |
| VOL H2O VAPOR-STD COND | SCF | 1.52 | 1.52 | 1.71 | |
| PERCENT MOISTURE BY VOL | | 4.4 | 4.6 | 5.2 | |
| MOLE FRACTION DRY GAS | | 0.956 | 0.954 | 0.948 | |
| PERCENT CO2 BY VOL, DRY | | 1.9 | 1.6 | 1.7 | |
| PERCENT O2 BY VOL, DRY | | 18.3 | 18.0 | 18.5 | |
| PERCENT CO BY VOL, DRY | | 0.1 | 0.1 | 0.1 | |
| PERCENT N2 BY VOL, DRY | | 79.7 | 80.3 | 79.7 | |
| MOLECULAR WT-DRY STK GAS | | 29.04 | 28.98 | 29.01 | |
| MOLECULAR WT-STK GAS | | 28.55 | 28.47 | 28.44 | |
| AVG STACK TEMPERATURE | DEG.F | 235.0 | 294.0 | 304.0 | |
| NET SAMPLING POINTS | | 1 | 1 | 1 | |
| STACK PRESSURE, ABSOLUTE | IN.HG | 29.56 | 29.54 | 29.50 | |
| AVG STACK GAS VELOCITY | FPS | 15.080 | 15.724 | 15.604 | 15.469 |
| STK FLOWRATE, DRY,STD CN | DSCFM | 652. | 624. | 607. | 628. |
| ACTUAL STACK FLOWRATE | ACFM | 905. | 943. | 936. | 926. |
| PERCENT ISOKINETIC | | 103.9 | 102.5 | 103.7 | 103.4 |
| PARTICULATE WT-PARTIAL | MG | 239.00 | 184.40 | 176.40 | 199.93 |
| PARTICULATE WT-TOTAL | MG | 358.70 | 264.60 | 689.50 | 437.60 |
| PERC IMPINGER CATCH | | 33.4 | 30.3 | 74.4 | 46.0 |
| PART. LOAD-PTL,STD CN | GR/DSCF | 0.11073 | 0.09040 | 0.08793 | 0.09635 |
| PART. LOAD-TTL,STD CN | GR/DSCF | 0.16619 | 0.12971 | 0.34369 | 0.21320 |
| PART. LOAD-PTL,STD CN @ 12% CO2 | | 0.69938 | 0.67796 | 0.62067 | 0.66600 |
| PART. LOAD-TTL,STD CN @ 12% CO2 | | 1.04965 | 0.97283 | 2.42602 | 1.48283 |
| PART. LOAD-PTL,STK CN | GR/ACF | 0.07973 | 0.05980 | 0.05695 | 0.06549 |
| PART. LOAD-TTL,STK CN | GR/ACF | 0.11965 | 0.08580 | 0.22259 | 0.14268 |
| PARTIC EMIS-PARTIAL | LB/HR | 0.62 | 0.48 | 0.46 | 0.52 |
| PARTIC EMIS-TOTAL | LB/HR | 0.93 | 0.69 | 1.79 | 1.14 |
| PART EMIS/WT PRD FD PTL | LB/TON | 15.80343 | 11.65863 | 13.85639 | 13.79282 |
| PART EMIS/WT PRD FD TTL | LB/TON | 23.80841 | 16.72925 | 54.16089 | 31.56616 |
| PERCENT EXCESS AIR | | 653.9 | 552.4 | 712.1 | 639.5 |

PLANT: C7BPI
LOCATION: NYC
OPERATOR: ERI

PARTICULATE SUMMARY IN ENGLISH UNITS

| DESCRIPTION | UNITS | 1 | 2 | 3 | AVERAGE |
|---|---|---|---|---|---|
| DATE OF RUN | | 06-06-73 | 06-06-73 | 06-06-73 | |
| STACK AREA | FT2 | 1.000 | 1.000 | 1.000 | |
| NET TIME OF RUN | MIN | 56.0 | 64.0 | 56.0 | |
| BAROMETRIC PRESSURE | IN.HG | 29.96 | 29.96 | 29.96 | |
| AVG ORIFICE PRES DROP | IN.H2O | 2.570 | 2.860 | 2.160 | |
| VOL DRY GAS-METER COND | DCF | 45.35 | 50.95 | 32.97 | |
| AVG GAS METER TEMP | DEG.F | 82.8 | 95.1 | 92.3 | |
| VOL DRY GAS-STD COND | DSCF | 44.62 | 49.04 | 31.85 | |
| TOTAL H2O COLLECTED | ML | 58.5 | 44.0 | 34.3 | |
| VOL H2O VAPOR-STD COND | SCF | 2.77 | 2.09 | 1.63 | |
| PERCENT MOISTURE BY VOL | | 5.9 | 4.1 | 4.9 | |
| MOLE FRACTION DRY GAS | | 0.941 | 0.959 | 0.951 | |
| PERCENT CO2 BY VOL, DRY | | 1.4 | 1.0 | 1.0 | |
| PERCENT O2 BY VOL, DRY | | 16.4 | 17.6 | 18.4 | |
| PERCENT CO BY VOL, DRY | | 0.0 | 0.4 | 0.0 | |
| PERCENT N2 BY VOL, DRY | | 82.2 | 81.0 | 80.6 | |
| MOLECULAR WT-DRY STK GAS | | 28.88 | 28.86 | 28.90 | |
| MOLECULAR WT-STK GAS | | 28.24 | 28.42 | 28.37 | |
| AVG STACK TEMPERATURE | DEG.F | 216.0 | 172.0 | 198.0 | |
| NET SAMPLING POINTS | | 1 | 1 | 1 | |
| STACK PRESSURE, ABSOLUTE | IN.HG | 29.96 | 29.96 | 29.96 | |
| AVG STACK GAS VELOCITY | FPS | 23.537 | 22.743 | 21.140 | 22.473 |
| STK FLOWRATE, DRY,STD CN | DSCFM | 1044. | 1099. | 973. | 1039. |
| ACTUAL STACK FLOWRATE | ACFM | 1412. | 1365. | 1268. | 1348. |
| PERCENT ISOKINETIC | | 99.5 | 90.9 | 76.2 | 88.9 |
| PARTICULATE WT-PARTIAL | MG | 885.00 | 299.90 | 161.00 | 448.63 |
| PARTICULATE WT-TOTAL | MG | 1389.10 | 743.30 | 438.50 | 856.97 |
| PERC IMPINGER CATCH | | 36.3 | 59.7 | 63.3 | 53.1 |
| PART. LOAD-PTL,STD CN | GR/DSCF | 0.30547 | 0.09417 | 0.07780 | 0.15917 |
| PART. LOAD-TTL,STD CN | GR/DSCF | 0.47947 | 0.23340 | 0.21205 | 0.30831 |
| PART. LOAD-PTL,STD CN @ 12% CO2 | | 2.61831 | 1.13000 | 0.93428 | 1.56088 |
| PART. LOAD-TTL,STD CN @ 12% CO2 | | 4.10970 | 2.80085 | 2.54460 | 3.15172 |
| PART. LOAD-PTL,STK CN | GR/ACF | 0.22561 | 0.07579 | 0.05970 | 0.12037 |
| PART. LOAD-TTL,STK CN | GR/ACF | 0.35411 | 0.18785 | 0.16259 | 0.23485 |
| PARTIC EMIS-PARTIAL | LB/HR | 2.73 | 0.89 | 0.65 | 1.42 |
| PARTIC EMIS-TOTAL | LB/HR | 4.29 | 2.20 | 1.77 | 2.75 |
| PART EMIS/WT PRD FD PTL | LB/TON | 58.13038 | 20.02868 | 20.61612 | 33.12704 |
| PART EMIS/WT PRD FD TTL | LB/TON | 91.25113 | 51.12805 | 56.15010 | 66.17644 |
| PERCENT EXCESS AIR | | 309.4 | 436.7 | 639.2 | 461.8 |

PLANT: CSPPI
LOCATION: NYC
OPERATOR: FRI

PARTICULATE SUMMARY IN ENGLISH UNITS

| DESCRIPTION | UNITS | 1 | 2 | 3 | AVERAGE |
|---|---|---|---|---|---|
| DATE OF RUN | | 06-19-73 | 06-19-73 | 06-19-73 | |
| STACK AREA | FT2 | 1.000 | 1.000 | 1.000 | |
| NET TIME OF RUN | MIN | 56.0 | 56.0 | 56.0 | |
| BAROMETRIC PRESSURE | IN.HG | 29.84 | 29.84 | 29.84 | |
| AVG ORIFICE PRES DROP | IN.H2O | 1.820 | 2.800 | 1.875 | |
| VOL DRY GAS-METER COND | DCF | 35.50 | 32.50 | 32.50 | |
| AVG GAS METER TEMP | DEG.F | 104.4 | 104.3 | 102.1 | |
| VOL DRY GAS-STD COND | DSCF | 33.39 | 30.65 | 30.69 | |
| TOTAL H2O COLLECTED | ML | 22.7 | 24.0 | 23.8 | |
| VOL H2O VAPOR-STD COND | SCF | 1.08 | 1.14 | 1.13 | |
| PERCENT MOISTURE BY VOL | | 3.1 | 3.6 | 3.5 | |
| MOLE FRACTION DRY GAS | | 0.969 | 0.964 | 0.965 | |
| PERCENT CO2 BY VOL, DRY | | 1.3 | 0.4 | 1.5 | |
| PERCENT O2 BY VOL, DRY | | 19.4 | 20.3 | 19.0 | |
| PERCENT CO BY VOL, DRY | | 0.0 | 0.0 | 0.0 | |
| PERCENT N2 BY VOL, DRY | | 79.3 | 79.3 | 79.5 | |
| MOLECULAR WT-DRY STK GAS | | 28.98 | 28.88 | 29.00 | |
| MOLECULAR WT-STK GAS | | 28.64 | 28.49 | 28.51 | |
| AVG STACK TEMPERATURE | DEG.F | 184.0 | 177.0 | 153.0 | |
| NET SAMPLING POINTS | | 1 | 1 | 1 | |
| STACK PRESSURE, ABSOLUTE | IN.HG | 29.84 | 29.84 | 29.84 | |
| AVG STACK GAS VELOCITY | FPS | 15.178 | 15.326 | 12.406 | 14.304 |
| STK FLOWRATE, DRY,STD CN | DSCFM | 724. | 736. | 619. | 693. |
| ACTUAL STACK FLOWRATE | ACFM | 911. | 920. | 744. | 858. |
| PERCENT ISOKINETIC | | 107.4 | 97.0 | 115.5 | 106.6 |
| PARTICULATE WT-PARTIAL | MG | 118.50 | 147.00 | 154.60 | 140.03 |
| PARTICULATE WT-TOTAL | MG | 214.90 | 233.00 | 256.70 | 234.87 |
| PERC IMPINGER CATCH | | 44.9 | 36.9 | 39.8 | 40.5 |
| PART. LOAD-PTL,STD CN | GR/DSCF | 0.05466 | 0.07386 | 0.07757 | 0.06870 |
| PART. LOAD-TTL,STD CN | GR/DSCF | 0.09912 | 0.11707 | 0.12879 | 0.11500 |
| PART. LOAD-PTL,STD CN @ 12% CO2 | | 0.50452 | 2.21587 | 0.62054 | 1.11364 |
| PART. LOAD-TTL,STD CN @ 12% CO2 | | 0.91494 | 3.51223 | 1.03035 | 1.81917 |
| PART. LOAD-PTL,STK CN | GR/ACF | 0.04343 | 0.05905 | 0.06446 | 0.05565 |
| PART. LOAD-TTL,STK CN | GR/ACF | 0.07875 | 0.09360 | 0.10704 | 0.09313 |
| PARTIC EMIS-PARTIAL | LB/HR | 0.34 | 0.47 | 0.41 | 0.41 |
| PARTIC EMIS-TOTAL | LB/HR | 0.62 | 0.74 | 0.68 | 0.68 |
| PART EMIS/WT PRD FD PTL | LB/TON | 10.76733 | 22.71767 | 20.57674 | 18.02057 |
| PART EMIS/WT PRD FD TTL | LB/TON | 19.52657 | 36.00829 | 34.16591 | 29.90024 |
| PERCENT EXCESS AIR | | 1263.7 | 3195.9 | 955.7 | 1805.1 |

PLANT: C9MPI
LOCATION: NYC
OPERATOR: FRI

PARTICULATE SUMMARY IN ENGLISH UNITS

| DESCRIPTION | UNITS | 1 | 2 | 3 | AVERAGE |
|---|---|---|---|---|---|
| DATE OF RUN | | 06-20-73 | 06-20-73 | 06-20-73 | |
| STACK AREA | FT2 | 1.000 | 1.000 | 1.000 | |
| NET TIME OF RUN | MIN | 56.0 | 56.0 | 56.0 | |
| BAROMETRIC PRESSURE | IN.HG | 29.86 | 29.86 | 28.86 | |
| AVG ORIFICE PRES DROP | IN.H2O | 1.000 | 1.321 | 1.632 | |
| VOL DRY GAS-METER COND | DCF | 30.42 | 35.02 | 39.92 | |
| AVG GAS METER TEMP | DEG.F | 83.2 | 97.6 | 107.3 | |
| VOL DRY GAS-STD COND | DSCF | 29.69 | 33.31 | 36.11 | |
| TOTAL H2O COLLECTED | ML | 23.0 | 30.0 | 34.2 | |
| VOL H2O VAPOR-STD COND | SCF | 1.09 | 1.42 | 1.62 | |
| PERCENT MOISTURE BY VOL | | 3.5 | 4.1 | 4.3 | |
| MOLE FRACTION DRY GAS | | 0.965 | 0.959 | 0.957 | |
| PERCENT CO2 BY VOL, DRY | | 0.5 | 0.9 | 1.4 | |
| PERCENT O2 BY VOL, DRY | | 20.1 | 19.8 | 19.3 | |
| PERCENT CO BY VOL, DRY | | 0.0 | 0.0 | 0.0 | |
| PERCENT N2 BY VOL, DRY | | 79.4 | 79.3 | 79.3 | |
| MOLECULAR WT-DRY STK GAS | | 28.88 | 28.94 | 29.00 | |
| MOLECULAR WT-STK GAS | | 28.50 | 28.49 | 28.52 | |
| AVG STACK TEMPERATURE | DEG.F | 150.0 | 188.0 | 205.0 | |
| NET SAMPLING POINTS | | 1 | 1 | 1 | |
| STACK PRESSURE, ABSOLUTE | IN.HG | 29.86 | 29.86 | 28.86 | |
| AVG STACK GAS VELOCITY | FPS | 13.288 | 17.488 | 19.256 | 16.678 |
| STK FLOWRATE, DRY,STD CN | DSCFM | 667. | 821. | 850. | 779. |
| ACTUAL STACK FLOWRATE | ACFM | 797. | 1049. | 1155. | 1001. |
| PERCENT ISOKINETIC | | 103.7 | 94.5 | 98.9 | 99.0 |
| PARTICULATE WT-PARTIAL | MG | 245.50 | 109.60 | 85.40 | 146.83 |
| PARTICULATE WT-TOTAL | MG | 399.50 | 204.10 | 206.90 | 270.17 |
| PERC IMPINGER CATCH | | 38.5 | 46.3 | 58.7 | 47.9 |
| PART. LOAD-PTL,STD CN | GR/DSCF | 0.12734 | 0.05066 | 0.03642 | 0.07147 |
| PART. LOAD-TTL,STD CN | GR/DSCF | 0.20722 | 0.09435 | 0.08823 | 0.12993 |
| PART. LOAD-PTL,STD CN @ 12% CO2 | | 3.05020 | 0.67552 | 0.31214 | 1.34795 |
| PART. LOAD-TTL,STD CN @ 12% CO2 | | 4.97332 | 1.25797 | 0.75622 | 2.32917 |
| PART. LOAD-PTL,STK CN | GR/ACF | 0.10642 | 0.03963 | 0.02077 | 0.05761 |
| PART. LOAD-TTL,STK CN | GR/ACF | 0.17318 | 0.07380 | 0.06486 | 0.10395 |
| PARTIC EMIS-PARTIAL | LB/HR | 0.73 | 0.36 | 0.27 | 0.45 |
| PARTIC EMIS-TOTAL | LB/HR | 1.18 | 0.66 | 0.64 | 0.83 |
| PART EMIS/WT PRD FD PTL | LB/TON | 31.63945 | 11.14498 | 7.26787 | 16.68410 |
| PART EMIS/WT PRD FD TTL | LB/TON | 51.48659 | 20.75447 | 17.60797 | 29.94900 |
| PERCENT EXCESS AIR | | 2332.9 | 1744.2 | 1180.3 | 1752.5 |

PLANT: C10MPI
LOCATION: NYC
OPERATOR: ERI

PARTICULATE SUMMARY IN ENGLISH UNITS

| DESCRIPTION | UNITS | 1 | 2 | AVERAGE |
|---|---|---|---|---|
| DATE OF RUN | | 05-21-73 | 05-21-73 | |
| STACK AREA | FT2 | 1.000 | 1.000 | |
| NET TIME OF RUN | MIN | 40.0 | 40.0 | |
| BAROMETRIC PRESSURE | IN.HG | 29.50 | 29.50 | |
| AVG ORIFICE PRES DROP | IN.H2O | 3.700 | 2.750 | |
| VOL DRY GAS-METER COND | DCF | 41.13 | 34.78 | |
| AVG GAS METER TEMP | DEG.F | 92.0 | 95.8 | |
| VOL DRY GAS-STD COND | DSCF | 39.29 | 32.92 | |
| TOTAL H2O COLLECTED | ML | 40.0 | 36.0 | |
| VOL H2O VAPOR-STD COND | SCF | 1.90 | 1.71 | |
| PERCENT MOISTURE BY VOL | | 4.6 | 4.9 | |
| MOLE FRACTION DRY GAS | | 0.954 | 0.951 | |
| PERCENT CO2 BY VOL, DRY | | 1.0 | 1.0 | |
| PERCENT O2 BY VOL, DRY | | 19.6 | 19.6 | |
| PERCENT CO BY VOL, DRY | | 0.1 | 0.1 | |
| PERCENT N2 BY VOL, DRY | | 79.3 | 79.3 | |
| MOLECULAR WT-DRY STK GAS | | 28.94 | 28.94 | |
| MOLECULAR WT-STK GAS | | 28.44 | 28.40 | |
| AVG STACK TEMPERATURE | DEG.F | 199.0 | 187.0 | |
| NET SAMPLING POINTS | | 1 | 1 | |
| STACK PRESSURE, ABSOLUTE | IN.HG | 29.50 | 29.50 | |
| AVG STACK GAS VELOCITY | FPS | 16.970 | 14.480 | 15.725 |
| STK FLOWRATE, DRY,STD CN | DSCFM | 770. | 667. | 719. |
| ACTUAL STACK FLOWRATE | ACFM | 1018. | 869. | 944. |
| PERCENT ISOKINETIC | | 93.6 | 90.5 | 92.0 |
| PARTICULATE WT-PARTIAL | MG | 129.60 | 330.00 | 229.80 |
| PARTICULATE WT-TOTAL | MG | 241.40 | 481.70 | 361.55 |
| PERC IMPINGER CATCH | | 46.3 | 31.5 | 38.9 |
| PART. LOAD-PTL,STD CN | GR/DSCF | 0.05080 | 0.15438 | 0.10259 |
| PART. LOAD-TTL,STD CN | GR/DSCF | 0.09463 | 0.22535 | 0.15999 |
| PART. LOAD-PTL,STD CN @ 12% CO2 | | 0.60902 | 1.85261 | 1.23111 |
| PART. LOAD-TTL,STD CN @ 12% CO2 | | 1.13551 | 2.70424 | 1.91988 |
| PART. LOAD-PTL,STK CN | GR/ACF | 0.03840 | 0.11845 | 0.07843 |
| PART. LOAD-TTL,STK CN | GR/ACF | 0.07152 | 0.17290 | 0.12221 |
| PARTIC EMIS-PARTIAL | LB/HR | 0.34 | 0.88 | 0.61 |
| PARTIC EMIS-TOTAL | LB/HR | 0.62 | 1.29 | 0.96 |
| PART EMIS/WT PRD FD PTL | LB/TON | 11.17695 | 27.15761 | 19.16727 |
| PART EMIS/WT PRD FD TTL | LB/TON | 20.81879 | 39.64186 | 30.23032 |
| PERCENT EXCESS AIR | | 1411.4 | 1411.4 | 1411.4 |

PLANT: U1RPI
LOCATION: NYC
OPERATOR: ERI

PARTICULATE SUMMARY IN ENGLISH UNITS

| DESCRIPTION | UNITS | 1 | 2 | 3 | AVERAGE |
|---|---|---|---|---|---|
| DATE OF RUN | | 05-26-73 | 05-26-73 | 05-26-73 | |
| STACK AREA | FT2 | 1.000 | 1.000 | 1.000 | |
| NET TIME OF RUN | MIN | 60.0 | 56.0 | 62.0 | |
| BAROMETRIC PRESSURE | IN.HG | 30.10 | 30.10 | 30.10 | |
| AVG ORIFICE PRES DROP | IN.H2O | 21.870 | 2.731 | 2.525 | |
| VOL DRY GAS-METER COND | DCF | 43.97 | 46.98 | 46.85 | |
| AVG GAS METER TEMP | DEG.F | 74.9 | 81.9 | 79.8 | |
| VOL DRY GAS-STD COND | DSCF | 46.16 | 46.52 | 46.54 | |
| TOTAL H2O COLLECTED | ML | 47.2 | 33.7 | 35.5 | |
| VOL H2O VAPOR-STD COND | SCF | 2.24 | 1.60 | 1.68 | |
| PERCENT MOISTURE BY VOL | | 4.6 | 3.3 | 3.5 | |
| MOLE FRACTION DRY GAS | | 0.954 | 0.967 | 0.965 | |
| PERCENT CO2 BY VOL, DRY | | 1.8 | 1.8 | 1.8 | |
| PERCENT O2 BY VOL, DRY | | 18.2 | 18.2 | 18.2 | |
| PERCENT CO BY VOL, DRY | | 0.1 | 0.1 | 0.1 | |
| PERCENT N2 BY VOL, DRY | | 79.9 | 79.9 | 79.9 | |
| MOLECULAR WT-DRY STK GAS | | 29.02 | 29.02 | 29.02 | |
| MOLECULAR WT-STK GAS | | 28.51 | 28.65 | 28.63 | |
| AVG STACK TEMPERATURE | DEG.F | 199.0 | 187.0 | 225.0 | |
| NET SAMPLING POINTS | | 1 | 1 | 1 | |
| STACK PRESSURE, ABSOLUTE | IN.HG | 30.10 | 30.10 | 30.10 | |
| AVG STACK GAS VELOCITY | FPS | 20.015 | 23.327 | 22.191 | 21.844 |
| STK FLOWRATE, DRY,STD CN | DSCFM | 926. | 1115. | 1000. | 1014. |
| ACTUAL STACK FLOWRATE | ACFM | 1201. | 1400. | 1331. | 1311. |
| PERCENT ISOKINETIC | | 108.3 | 97.2 | 97.9 | 101.1 |
| PARTICULATE WT-PARTIAL | MG | 557.60 | 134.00 | 178.20 | 289.93 |
| PARTICULATE WT-TOTAL | MG | 859.60 | 344.50 | 312.70 | 505.60 |
| PERC IMPINGER CATCH | | 35.1 | 61.1 | 43.0 | 46.4 |
| PART. LOAD-PTL,STD CN | GR/DSCF | 0.18603 | 0.04436 | 0.05896 | 0.09645 |
| PART. LOAD-TTL,STD CN | GR/DSCF | 0.28678 | 0.11404 | 0.10346 | 0.16809 |
| PART. LOAD-PTL,STD CN @ 12% CO2 | | 1.24017 | 0.29572 | 0.39308 | 0.64299 |
| PART. LOAD-TTL,STD CN @ 12% CO2 | | 1.91185 | 0.76026 | 0.68976 | 1.12063 |
| PART. LOAD-PTL,STK CN | GR/ACF | 0.14344 | 0.03531 | 0.04426 | 0.07434 |
| PART. LOAD-TTL,STK CN | GR/ACF | 0.22113 | 0.09079 | 0.07766 | 0.12980 |
| PARTIC EMIS-PARTIAL | LB/HR | 1.48 | 0.42 | 0.51 | 0.80 |
| PARTIC EMIS-TOTAL | LB/HR | 2.28 | 1.09 | 0.89 | 1.42 |
| PART EMIS/WT PRD FD PTL | LB/TON | 41.03618 | 9.11591 | 9.90958 | 20.02055 |
| PART EMIS/WT PRD FD TTL | LB/TON | 63.26166 | 23.43604 | 17.38901 | 34.69556 |
| PERCENT EXCESS AIR | | 616.0 | 616.6 | 616.6 | 616.6 |

PLANT: U2MPI
LOCATION: NYC
OPERATOR: ERI

PARTICULATE SUMMARY IN ENGLISH UNITS

| DESCRIPTION | UNITS | 1 | 2 | AVERAGE |
|---|---|---|---|---|
| DATE OF RUN | | 08-28-73 | 08-28-73 | |
| STACK AREA | FT2 | 1.000 | 1.000 | |
| NET TIME OF RUN | MIN | 56.0 | 64.0 | |
| BAROMETRIC PRESSURE | IN.HG | 30.10 | 30.10 | |
| AVG ORIFICE PRES DROP | IN.H2O | 1.590 | 0.826 | |
| VOL DRY GAS-METER COND | DCF | 37.61 | 33.49 | |
| AVG GAS METER TEMP | DEG.F | 96.9 | 97.0 | |
| VOL DRY GAS-STD COND | DSCF | 36.14 | 32.12 | |
| TOTAL H2O COLLECTED | ML | 37.1 | 36.8 | |
| VOL H2O VAPOR-STD COND | SCF | 1.76 | 1.74 | |
| PERCENT MOISTURE BY VOL | | 4.8 | 5.2 | |
| MOLE FRACTION DRY GAS | | 0.954 | 0.948 | |
| PERCENT CO2 BY VOL, DRY | | 1.5 | 1.5 | |
| PERCENT O2 BY VOL, DRY | | 19.0 | 19.0 | |
| PERCENT CO BY VOL, DRY | | 0.1 | 0.1 | |
| PERCENT N2 BY VOL, DRY | | 79.4 | 79.4 | |
| MOLECULAR WT-DRY STK GAS | | 29.00 | 29.00 | |
| MOLECULAR WT-STK GAS | | 28.49 | 28.43 | |
| AVG STACK TEMPERATURE | DEG.F | 142.0 | 160.0 | |
| NET SAMPLING POINTS | | 1 | 1 | |
| STACK PRESSURE, ABSOLUTE | IN.HG | 30.10 | 30.10 | |
| AVG STACK GAS VELOCITY | FPS | 17.006 | 11.561 | 14.284 |
| STK FLOWRATE, DRY,STD CN | DSCFM | 862. | 560. | 714. |
| ACTUAL STACK FLOWRATE | ACFM | 1020. | 694. | 857. |
| PERCENT ISOKINETIC | | 97.7 | 115.7 | 106.7 |
| PARTICULATE WT-PARTIAL | MG | 134.20 | 60.80 | 97.50 |
| PARTICULATE WT-TOTAL | MG | 240.20 | 118.30 | 179.25 |
| PERC IMPINGER CATCH | | 44.1 | 48.6 | 46.4 |
| PART. LOAD-PTL,STD CN | GR/DSCF | 0.05719 | 0.02915 | 0.04317 |
| PART. LOAD-TTL,STD CN | GR/DSCF | 0.10236 | 0.05672 | 0.07954 |
| PART. LOAD-PTL,STD CN @ 12% CO2 | | 0.45753 | 0.23322 | 0.34537 |
| PART. LOAD-TTL,STD CN @ 12% CO2 | | 0.81891 | 0.45379 | 0.63635 |
| PART. LOAD-PTL,STK CN | GR/ACF | 0.04827 | 0.02376 | 0.03601 |
| PART. LOAD-TTL,STK CN | GR/ACF | 0.08639 | 0.04623 | 0.06631 |
| PARTIC EMIS-PARTIAL | LB/HR | 0.42 | 0.14 | 0.28 |
| PARTIC EMIS-TOTAL | LB/HR | 0.76 | 0.28 | 0.52 |
| PART EMIS/WT PRD FD PTL | LB/TON | 13.84804 | 5.33422 | 9.59113 |
| PART EMIS/WT PRD FD TTL | LB/TON | 24.78613 | 10.37892 | 17.58252 |
| PERCENT EXCESS AIR | | 942.0 | 942.0 | 942.0 |

PLANT: U3MPI
LOCATION: NYC
OPERATOR: FRI

PARTICULATE SUMMARY IN ENGLISH UNITS

| DESCRIPTION | UNITS | 3 | 2 | AVERAGE |
|---|---|---|---|---|
| DATE OF RUN | | 05-30-73 | 05-30-73 | |
| STACK AREA | FT2 | 1.000 | 1.000 | |
| NET TIME OF RUN | MIN | 56.0 | 56.0 | |
| BAROMETRIC PRESSURE | IN.HG | 29.60 | 29.60 | |
| AVG ORIFICE PRES DROP | IN.H2O | 3.956 | 3.733 | |
| VOL DRY GAS-METER COND | DCF | 60.65 | 59.00 | |
| AVG GAS METER TEMP | DEG.F | 109.0 | 108.8 | |
| VOL DRY GAS-STD COND | DSCF | 56.43 | 54.88 | |
| TOTAL H2O COLLECTED | ML | 79.6 | 81.4 | |
| VOL H2O VAPOR-STD COND | SCF | 3.77 | 3.86 | |
| PERCENT MOISTURE BY VOL | | 6.3 | 6.6 | |
| MOLE FRACTION DRY GAS | | 0.937 | 0.934 | |
| PERCENT CO2 BY VOL, DRY | | 1.8 | 1.8 | |
| PERCENT O2 BY VOL, DRY | | 17.6 | 17.6 | |
| PERCENT CO BY VOL, DRY | | 0.1 | 0.1 | |
| PERCENT N2 BY VOL, DRY | | 80.5 | 80.5 | |
| MOLECULAR WT-DRY STK GAS | | 28.99 | 28.99 | |
| MOLECULAR WT-STK GAS | | 28.30 | 28.27 | |
| AVG STACK TEMPERATURE | DEG.F | 153.0 | 144.0 | |
| NET SAMPLING POINTS | | 1 | 1 | |
| STACK PRESSURE, ABSOLUTE | IN.HG | 29.60 | 29.60 | |
| AVG STACK GAS VELOCITY | FPS | 27.964 | 26.893 | 27.429 |
| STK FLOWRATE, DRY,STD CN | DSCFM | 1345. | 1308. | 1327. |
| ACTUAL STACK FLOWRATE | ACFM | 1678. | 1614. | 1646. |
| PERCENT ISOKINETIC | | 97.7 | 97.7 | 97.7 |
| PARTICULATE WT-PARTIAL | MG | 48.40 | 77.90 | 63.15 |
| PARTICULATE WT-TOTAL | MG | 119.80 | 153.80 | 136.70 |
| PERC IMPINGER CATCH | | 59.5 | 49.3 | 54.4 |
| PART. LOAD-PTL,STD CN | GR/DSCF | 0.01321 | 0.02186 | 0.01753 |
| PART. LOAD-TTL,STD CN | GR/DSCF | 0.03264 | 0.04316 | 0.03790 |
| PART. LOAD-PTL,STD CN @ 12% CO2 | | 0.08806 | 0.14574 | 0.11690 |
| PART. LOAD-TTL,STD CN @ 12% CO2 | | 0.21760 | 0.28774 | 0.25267 |
| PART. LOAD-PTL,STK CN | GR/ACF | 0.01058 | 0.01772 | 0.01415 |
| PART. LOAD-TTL,STK CN | GR/ACF | 0.02615 | 0.03498 | 0.03056 |
| PARTIC EMIS-PARTIAL | LB/HR | 0.15 | 0.25 | 0.20 |
| PARTIC EMIS-TOTAL | LB/HR | 0.38 | 0.48 | 0.43 |
| PART EMIS/WT PRD FD PTL | LB/TON | 2.67141 | 9.25205 | 5.96173 |
| PART EMIS/WT PRD FD TTL | LB/TON | 6.60126 | 18.26657 | 12.43391 |
| PERCENT EXCESS AIR | | 474.1 | 474.1 | 474.1 |

PLANT: U4RHI
LOCATION: NYC
OPERATOR: ERI

## PARTICULATE SUMMARY IN ENGLISH UNITS

| DESCRIPTION | UNITS | 1 | 2 | AVERAGE |
|---|---|---|---|---|
| DATE OF RUN | | 06-29-73 | 06-29-73 | |
| STACK AREA | FT2 | 1.000 | 1.000 | |
| NET TIME OF RUN | MIN | 64.0 | 64.0 | |
| BAROMETRIC PRESSURE | IN.HG | 29.88 | 29.88 | |
| AVG ORIFICE PRES DROP | IN.H2O | 0.940 | 0.840 | |
| VOL DRY GAS-METER COND | DCF | 32.10 | 30.55 | |
| AVG GAS METER TEMP | DEG.F | 102.4 | 106.4 | |
| VOL DRY GAS-STD COND | DSCF | 30.27 | 28.61 | |
| TOTAL H2O COLLECTED | ML | 51.0 | 52.0 | |
| VOL H2O VAPOR-STD COND | SCF | 2.42 | 2.46 | |
| PERCENT MOISTURE BY VOL | | 7.4 | 7.9 | |
| MOLE FRACTION DRY GAS | | 0.926 | 0.921 | |
| PERCENT CO2 BY VOL, DRY | | 1.9 | 1.9 | |
| PERCENT O2 BY VOL, DRY | | 18.2 | 18.2 | |
| PERCENT CO BY VOL, DRY | | 0.1 | 0.1 | |
| PERCENT N2 BY VOL, DRY | | 79.8 | 79.8 | |
| MOLECULAR WT-DRY STK GAS | | 29.03 | 29.03 | |
| MOLECULAR WT-STK GAS | | 28.22 | 28.16 | |
| AVG STACK TEMPERATURE | DEG.F | 147.0 | 128.0 | |
| NET SAMPLING POINTS | | 1 | 1 | |
| STACK PRESSURE, ABSOLUTE | IN.HG | 29.88 | 29.88 | |
| AVG STACK GAS VELOCITY | FPS | 29.865 | 27.474 | 28.670 |
| STK FLOWRATE, DRY,STD CN | DSCFM | 1447. | 1366. | 1406. |
| ACTUAL STACK FLOWRATE | ACFM | 1792. | 1648. | 1720. |
| PERCENT ISOKINETIC | | 95.9 | 96.0 | 96.0 |
| PARTICULATE WT-PARTIAL | MG | 65.20 | 64.50 | 64.85 |
| PARTICULATE WT-TOTAL | MG | 102.60 | 98.30 | 100.45 |
| PERC IMPINGER CATCH | | 36.5 | 34.4 | 35.4 |
| PART. LOAD-PTL,STD CN | GR/DSCF | 0.03317 | 0.03472 | 0.03395 |
| PART. LOAD-TTL,STD CN | GR/DSCF | 0.05220 | 0.05292 | 0.05256 |
| PART. LOAD-PTL,STD CN @ 12% CO2 | | 0.20949 | 0.21931 | 0.21440 |
| PART. LOAD-TTL,STD CN @ 12% CO2 | | 0.32966 | 0.33423 | 0.33194 |
| PART. LOAD-PTL,STK CN | GR/ACF | 0.02676 | 0.02875 | 0.02776 |
| PART. LOAD-TTL,STK CN | GR/ACF | 0.04211 | 0.04382 | 0.04297 |
| PARTIC EMIS-PARTIAL | LB/HR | 0.41 | 0.41 | 0.41 |
| PARTIC EMIS-TOTAL | LB/HR | 0.65 | 0.62 | 0.63 |
| PART EMIS/WT PRD FD PTL | LB/TON | 6.47707 | 5.56880 | 6.02293 |
| PART EMIS/WT PRD FD TTL | LB/TON | 10.19245 | 8.48702 | 9.33973 |
| PERCENT EXCESS AIR | | 622.2 | 622.2 | 622.2 |

# APPENDIX C

## Stack Testing Personnel

## Stack Testing Personnel

Michael Kormanik

Anthony Cava

Ellis Johnson

Carlos Morales

Kenneth Cabiness

Robert Baker

Kenneth Moore

Thomas Card

Theodore Hudson

Arthur Fossa

William Hartenstein

Wayne Roberts

Charles Wylie

Jerome Hatch

David Prosser

Charles Chernoff

Kevin Hafinin

David Jones

James McGarry

Richard Foley

Roger McCabe

Dominic Buccilli

Marsden Chen

Neil Isabelle

Burton Pine

Michael Moore

Bruce Neddo

Donald Daoust

David Wazenkewitz

Henry Moore

Patrick Balogna

# APPENDIX D

## Fuel Analysis

## FUEL ANALYSIS

| Identity | API Gravity | Specific Gravity 60/60°F | Specific Gravity 15/4°C | Viscosity @ 100°F SUS | % Ash | % Sulfur | % Carbon | BTU/ Pound |
|---|---|---|---|---|---|---|---|---|
| A1BHB 5-22-73 | 25.5 | 0.9013 | 0.9008 | 142.6 | 0.003 | 0.24 | 86.03 | 19,240 |
| A10BHB | 25.2 | 0.9030 | 0.9025 | 186.8 | 0.002 | 0.27 | * | 19,260 |
| C1BHB | 25.1 | 0.9036 | 0.9031 | 160.0 | 0.006 | 0.29 | * | 19,220 |
| A3BHB | 25.4 | 0.9018 | 0.9014 | 142.8 | 0.003 | 0.29 | * | 19,275 |
| B5BHB | 20.6 | 0.9303 | 0.9298 | 378.0 | 1.03 | 0.43 | 85.12 | 18,890 |
| U4MPB 5-11-73 | 21.1 | 0.9273 | 0.9267 | 282.0 | 0.59 | 0.39 | * | 18,930 |
| B4MPB 3-30-73 F-73-000-024 | 25.1 | 0.9036 | 0.9031 | 147.3 | 0.003 | 0.30 | * | 19,290 |
| U3MPB 4-18-73 F-73-000-029 | 25.2 | 0.9030 | 0.9025 | 113.0 | 0.003 | 0.29 | 85.24 | 19,245 |
| A8MPB F-73-000-030 | 24.0 | 0.9100 | 0.9095 | 309.0 | 0.009 | 0.36 | * | 19,200 |
| A9MPB F-73-000-031 | 24.5 | 0.9065 | 0.9060 | 213.0 | 0.007 | 0.39 | * | 19,220 |
| A2BPB F-73-000-033 | 25.5 | 0.9013 | 0.9008 | 122.6 | 0.003 | 0.32 | * | 19,185 |

| Identity | API Gravity | Specific Gravity 60/60°F | Specific Gravity 15/4°C | Viscosity @ 100°F SUS | % Ash | % Sulfur | % Carbon | BTU/ Pound |
|---|---|---|---|---|---|---|---|---|
| B4MPB<br>4-3-73<br>F-73-000-034 | 25.2 | 0.9030 | 0.9025 | 147.3 | 0.003 | 0.36 | * | 19,755 |
| D4BPB<br>F-73-000-037 | 25.0 | 0.9042 | 0.9037 | 139.5 | 0.001 | 0.31 | * | 19,175 |
| U1BPB<br>5-27-73<br>F-73-000-039 | 24.7 | 0.9059 | 0.9054 | 261.0 | 0.004 | 0.29 | * | 19,240 |
| U5BPB<br>5-22-73<br>F-73-000-040 | 24.5 | 0.9071 | 0.9065 | 286.0 | 0.003 | 0.26 | * | 19,100 |
| A6BPB<br>5-7-73<br>F-73-000-045 | 25.3 | 0.9024 | 0.9019 | 110.2 | 0.005 | 0.31 | * | 19,120 |
| U2MPB<br>4-20-73<br>F-73-000-046 | 25.6 | 0.9007 | 0.9002 | 91.1 | 0.004 | 0.31 | * | 19,100 |
| A7MPB<br>4-13-73<br>F-73-000-047 | 25.8 | 0.8996 | 0.8991 | 66.5 | 0.004 | 0.32 | * | 19,135 |
| B2BPB<br>73 SM 544 | N.A. | N.A. | N.A. | 169.8 | 0.004 | 0.33 | * | 19,170 |
| B1MPB<br>73 SM 546 | N.A. | N.A. | N.A. | 82.5 | 0.004 | 0.35 | * | 19,440 |

| Identity | API Gravity | Specific Gravity 60/60°F | Specific Gravity 15/4°C | Viscosity @ 100°F SUS | % Ash | % Sulfur | % Carbon | BTU/ Pound |
|---|---|---|---|---|---|---|---|---|
| A4MPB 73 SM 548 | N.A. | N.A. | N.A. | 126.6 | 0.004 | 0.35 | * | 19,100 |
| B3BPB 73 SM 586 | 24.8 | 0.9053 | 0.9048 | 173.1 | 0.009 | 0.29 | * | 19,230 |
| D3MPB 73 SM 588 | 26.3 | 0.8967 | 0.8962 | 64.5 | 0.005 | 0.34 | 85.86 | 19,000 |
| D1MPB 3-27-73 | N.A. | N.A. | N.A. | N.A. | N.A. | 0.33 | * | 19,278 |
| D2MPB 3-22-73 | N.A. | N.A. | N.A. | N.A. | N.A. | 0.33 | * | 19,256 |
| A5MPB 3-21-73 | N.A. | N.A. | N.A. | N.A. | N.A. | 0.96 | * | 19,073 |

*The carbon content at these sites is assumed to be 85.4%

APPENDIX E

Sample Forms

BOILER EQUIPMENT CHECKLIST

NYC Certificate of Operation? ____ Yes ✓ No

Boiler: Mfr. COKEFAIR

Model No. _____

✓ Steel or ____ Cast Iron

Approx. Age 50

✓ Steam or ____ Hot Water

Steam Pressure 5 PSI Gage

No. of Flue Passes ____

Furnace Volume ____ cu. ft.

Gross Output ____ BTUH ____ BHP

Burner: Mfr. PETRO

Model No. GAIT

Operation: ✓ on-off

____ stepped

____ modulating

Type: ✓ Horizontal Rotary Cup

____ Air Atomizer

____ Steam Atomizer

____ Other

Max. Firing Rate 35 GPH

Primary Oil Heater: ✓ Yes ____ No

Secondary Oil Heater: ✓ Yes ____ No

Combustion Controller: ✓ Yes ____ No

Sequential Draft Controller: ____ Yes ✓ No

Barometric Damper: ____ Yes ✓ No

Windbox: ____ Yes ✓ No

Fire Tube yes ✓ no ____

Water Tube yes ____ no ____

Sectional yes ____ no ____

Ventilation, Louvre(s) ____ Yes ✓ No area ____ sq. in.

in boiler room:

open door(s) ____ Yes ✓ No area ____ sq. in.

open window(s) ____ Yes ✓ No area ____ sq. in.

fresh air duct ____ Yes ✓ No area ____ sq. in.

fresh air fan ____ Yes ✓ No

Chimney Height: 13 ft.

Condition of Equipment - Remarks

Soot Blowing: NONE

Method: _____ Compressed Air _____ psig.

_____ Steam _____ psig.

_____ Shot

Frequency _____ Per Day

Time Duration _____ minutes

Type of Soot Blower: _____ Stationary _____ Rotating

_____ Manual Retracting

_____ Automatic Retracting

_____ Other

No. of Boilers _____

Total Boiler Firing Rate ____ gph

Provide rough sketch of internal construction of boiler with overal dimensions:

Access and Services

1. Is there a source of electricity? YES, ~~direct~~ line or general use?
   Is fuse box accessible? YES Amperage: _____
2. Are wall plugs available for intercom, roof and boiler room? NO
   Can wired phones be used, roof to boiler room? ~~YES~~ NO
3. How will equipment be raised? Elevator, stairs, roof pulley, dumwaiter?
4. Is parking generally available? NO
5. How many floors in the building: 6

Remarks _____

_____

Boiler Room

1. Is stack used only for boiler? YES
   Other equipment exhaust to stack (other boilers, incinerators, water heaters, etc.) NONE
2. Must one or two oil meters be installed? 2
3. Where and how is burner recycled (started) HEAT TIMER

   _____
4. Is serviceman needed to operate boiler? NO
5. What is firing rate (GPM) of burner? 25 Approx.
6. Is breeching accessible? YES Is ¼" hole available? NO
   Can hole be drilled easily? YES
7. Is soot blowing utilized? NO How many times/day _____
   How long is each blowperiod? _____ When? _____
8. Can stack test be performed in basement? NO ?
   If yes, provide details or sketch.

Remarks _____

_____

# BOILER ROOM DATA

| | CLOCK TIME | OIL METER READING - GAL. METER NO. 1 SUPPLY | OIL METER READING - GAL. METER NO. 2 RETURN | Δ GAL. | BACHARACH INSTRUMENT NO. / SMOKE NO. | AFTER FIRE BOX TEMP °F | OIL SUPPLY TEMP °F | ROOM TEMP |
|---|---|---|---|---|---|---|---|---|
| START | 9:42 | ~~999½~~ | ~~346.75~~ | | A #1 | 350 | 138 | 88 |
| | 9:47 | | | | #1 | 380 | " | 86 |
| | 9:52 | | | | #1 | 410 | " | 86 |
| | 9:59 | | | | #1 | 410 | " | 88 |
| | 10:04 | | | | #1 | 410 | " | 88 |
| | 10:09 | | 3 3478.75 | | #1 | 410 | " | 88 |
| | 10:15 | END | 1ST HALF OF TEST 2 | | | | | |
| START | 10:55 | 999½ | 3479. | | B #1 | 390 | 138 | 86 |
| | 11:00 | | | | #1 | 400 | 138 | 86 |
| | 11:05 | | | | #1 | 405 | 138 | 87 |
| | 11:10 | | | | #1 | 410 | 138 | 88 |
| | 11:15 | | | | #1 | 440 | 138 | 88 |
| | 11:20 | | | | #1 | 415 | | 88 |
| | 11:25 | | 3461. | | #1 | 410 | | 88 |
| | | END | 2ND HALF OF TEST 2 (1ST HALF OF TEST 1) | | | | | |
| START | 11:55 | | 3461. | | C #1 | 380 | 130 | 88 |
| | 12:00 | | | | #1 | 390 | | 88 |
| | 12:05 | | | | #1 | 410 | | 88 |
| | 12:10 | | | | #1 | 410 | | 88 |
| | 12:05 | | | | #1 | 410 | | 88 |
| | 12:20 | | | | #1 | 405 | 140 | 88 |
| | 12:25 | | | | #1 | 407 | | 88 |
| | 12:30 | | 3483. | | | | 140 | 88 |
| | | END | 2ND HALF OF TEST 1 | | | | | |
| | TOTAL TIME | | | TOTAL GAL. | AVERAGE #1 | | AVERAGE | |

## PARTICULATE FIELD DATA

Plan

Loca:

Run No. 1

Date 4/4/73

Operator C. MORALES

Meter Box No. 2

Sample Box No. _____

Meter Δ H 1.97

C Factor 1.06

Filter No.
START 10:55
STOP

Condensate
FILTER 3-73
CONDENSATE 8.7 GMS
41.0 ML
49.7 ML $H_2O$

Ambient Temp °F 56

Bar. Press "Hg 29.71

Assumed Moisture % 6

Heater Box Setting, °F _____

Probe Tip Dia., In. 1/4

Probe Length 3'

Probe Heater Setting _____

Avg. Δ P _____ Avg. Δ H _____

| Start | Point | Sampling Time | Dry Gas Meter CF | Pitot Δ P | Orifice Δ H | Dry Gas Temp In | Dry Gas Temp Out | Vacuum "Hg | Impinger Temp °F | Stack Temp °F | Stack Gas Velocity FPS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10:55 | 1 | 10:55 | 268.20 | .22 | .657 | 78 | 75 | 1 | | | |
| | | 11:00 | 270.31 | .24 | .8 | 82 | 76 | 1 | | 275 | |
| | | 11:05 | 273.37 | .24 | .8 | 88 | 78 | 1 | | 280 | |
| | | 11:10 | 275.79 | .24 | .8 | 92 | 76 | 1 | | 280 | |
| | 2 | 11:15 | 278.56 | .33 | 1.1 | 78 | 78 | 1 | | 280 | |
| | | 11:20 | 281.45 | .32 | 1.1 | 102 | 80 | 1 | | 280 | |
| | | 11:25 | 284.32 | .33 | 1.1 | 106 | 92 | 1 | | 280 | |
| | | | 284.32 | | | | | | | 280 | |
| 11:55 | 3 | 11:55 | | .24 | .79 | 80 | 78 | | | | |
| | | 11:57 | 286.3 | .28 | .90 | | | | | 280 | |
| | | 12:00 | 287.0 | .29 | .93 | 88 | 78 | | | 280 | |
| | | 12:05 | 289.7 | .30 | .96 | 94 | 78 | | | 280 | |
| Total | | 12:10 | | | | Avg. | Avg. | | | | |
| Avg. | | | | | | Avg. | | | | | |

O RINGELMANN

SC-52 (9/72)

## RESULTS OF ORSAT ANALYSIS

TEST_____

Description of equipment being tested BOILER
Hi-Lo MODULATOR

Orsat analysis data
Tests made by E.J.

| Time | $CO_2$ | $O_2$ | CO | % $N_2$ | Flue Gas Temperature |
|---|---|---|---|---|---|
| | Orsat Reading % $CO_2$ | Orsat Reading % $O_2$ | Orsat Reading % CO | | |
| | 5.6% | 13.1% | .2% | | |
| | 5.6% | 13.0 | .2% | | |
| | 5.7 | 13.1 | .1% | | |
| | | | | | |
| | avg. 5.6 | avg 13.1 | avg .2 | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Remarks:

CARBON BALANCE

(Basis: One Hour of Actual Burner Operation)

ddress _____ Date _____

## Fuel Analysis

1. Gallons of fuel burned in one hour =

   40.6 gal.

2. Pounds of fuel burned in one hour =

   40.8 gals. x $\frac{8.33 \times .8967 \text{ lbs}}{\text{gal}}$ =

   303. pounds

3. Amount of carbon burned in one hour =

   $\frac{.854 \text{ lb C}}{\text{lb fuel}}$ x 303. lbs fuel =

   259 lbs carbon

## Orsat Analysis

4. Volumetric flow rate, Qs = 85444 CFH @ standard conditions (dry)

5. $CO_2$ flow rate =

   $\frac{\%CO_2}{100}$ x Qs = .056 x 85444

   = 4785 CFH

6. CO flow rate =

   $\frac{\%CO}{100}$ x Qs = .002 x 85444

   = 171 $CFH_t$

7. Total $CO_2$ + CO flow rate =

   4785 + 171 = 4956 $CFH_t$

8. Pounds C being emitted =

   4956 $CFH_t$ x $\frac{492}{530}$ x $\frac{12}{359}$

   = 154 lbs carbon

RESULTS OF ORSAT ANALYSIS

TEST_____

Description of equipment being tested BOILER
Hi-Lo MODULATOR

Orsat analysis data
Tests made by E.J.

| Time | $CO_2$ | $O_2$ | CO | % $N_2$ | Flue Gas Temperature |
|---|---|---|---|---|---|
| | Orsat Reading % $CO_2$ | Orsat Reading % $O_2$ | Orsat Reading % CO | | |
| | 5.6% | 13.1% | .2% | | |
| | 5.6% | 13.0 | .2% | | |
| | 5.7 | 13.1 | .1% | | |
| | | | | | |
| | avg. 5.6 | avg 13.1 | avg .2 | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Remarks:

CARBON BALANCE

(Basis: One Hour of Actual Burner Operation)

ddress_____ Date_____

## Fuel Analysis

1. Gallons of fuel burned in one hour =

   40.6 gal.

2. Pounds of fuel burned in one hour =

   40.8 gals. x $\frac{8.33 \times .8967 \text{ lbs}}{\text{gal}}$ =

   303. pounds

3. Amount of carbon burned in one hour =

   $\frac{.854 \text{ lb C}}{\text{lb fuel}}$ x 303. lbs fuel =

   259 lbs carbon

## Orsat Analysis

4. Volumetric flow rate, Qs = 85444 CFH @ standard conditions (dry)

5. $CO_2$ flow rate =

   $\frac{\%CO_2}{100}$ x Qs = .156 x 85444

   = 4785 CFH

6. CO flow rate =

   $\frac{\%CO}{100}$ x Qs = .002 x 85444

   = 171 $CFH_t$

7. Total $CO_2$ + CO flow rate =

   4785 + 171 = 4956 $CFH_t$

8. Pounds C being emitted =

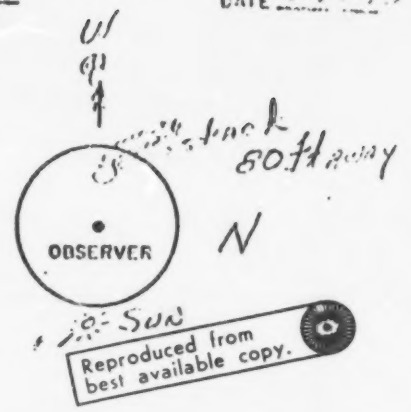
   4956 $CFH_t$ x $\frac{492}{530}$ x $\frac{12}{359}$

   = 154 lbs carbon

10:15

WIND VELOCITY 11-6 NW

DATE 5/17/75




LOCATION 1

OBSERVER

(Indicate sun, wind direction, stack and distance)

| CLOCK TIME | RING # | CLOCK TIME | RING # |
|---|---|---|---|
| 15 sec. | 1 | 15 sec | 1 |
| 30 | 1 | 30 | 1 |
| 45 | 1 | 45 | 1 |
| 60 | 1 | 60 | 1 |
| 15 | 1 | 15 | 1 |
| 30 | 1 | 30 | 1 |
| 45 | >1 | 45 | 1 |
| 60 | >1 | 60 | 1 |
| 15 | 2 | 15 | 1 |
| 30 | 1 | 30 | 1 |
| 45 | >1 | 45 | 1 |
| 60 | 2 | 60 | 1 |
| 15 | 2 | 15 | >1 |
| 30 | >2 | 30 | >1 |
| 45 | 3 | 45 | 1 |
| 60 | 3 | 60 | 1 |
| 15 | >2 | 15 | 1 |
| 30 | 2 | 30 | >1 |
| 45 | 2 | 45 | >1 |
| 60 | >1 | 60 | 1 |
| 15 | >1 | 15 | 1 |
| 30 | >1 | 30 | 1 |
| 45 | >1 | 45 | 1 |
| 60 | 2 | 60 | <1 |
| 15 | 2 | 15 | <1 |
| 30 | 2 | 30 | <1 |
| 45 | 2 | 45 | <1 |
| 60 | 2 | 60 | <1 |
| 15 | >1 | 15 | <1 |
| 30 | >1 | 30 | <1 |
| 45 | >1 | 45 | <1 |
| 60 | >1 | 60 | <1 |
| 15 | >1 | 15 | <1 |
| 30 | >1 | 30 | <1 |
| 45 | 1 | 45 | <1 |
| 60 | 1 | 60 | <1 |

| CLOCK TIME | RING. # | CLOCK TIME | RING. # |
|---|---|---|---|
| 15 sec | <1 | 15 sec | 0 |
| 30 | <1 | 30 | 0 |
| 45 | <1 | 45 | 0 |
| 60 | <1 | 60 | 0 |
| 15 | <1 | 15 | |
| 30 | <1 | 30 | <1 |
| 45 | <1 | 45 | <1 |
| 60 | 1 | 60 | <1 |
| 15 | 1 | 15 | <1 |
| 30 | 1 | 30 | 0 |
| 45 | <1 | 45 | 0 |
| 60 | <1 | 60 | 0 |
| 15 | <1 | 15 | 0 |
| 30 | <1 | 30 | 0 |
| 45 | <1 | 45 | 0 |
| 60 | <1 | 60 | 0 |
| 15 | <1 | 15 | 0 |
| 30 | <1 | 30 | 0 |
| 45 | <1 | 45 | 0 |
| 60 | <1 | 60 | 0 |
| 15 | <1 | 15 | 0 |
| 30 | <1 | 30 | 0 |
| 45 | <1 | 45 | 0 |
| 60 | 0 | 60 | 0 |

From 10:15 to 10:45 A.M.



E-9

REFUSE CHARGING DATA

## Test 1

Charge 127.5 lbs
NON Combust. 103.5# ASH
burned refuse 24.0 lbs

## Test 2

Charge 116 lbs
NON combust. 72.5# ASH
burned refuse 43.5 lbs

## Test 3

Charge 118 lbs
NON Combust. 42.0#
burned refuse 76.0 lbs

## Test 4

Charge 144.5 lbs
NON Combust 63.5
81.0 lbs

Up #1

PRETEST INCINERATOR INSPECTION

C

Stack and Roof

*1. Is chimney structurally sound?

*2. What is height of stack above roof 15', above penthouse 3 ?

*3. Is there a roof settling chamber? Yes

How many stack diameters is available above chamber? 4

Can this stack be tested on lower floor or penthouse? NO

4. Should this site be rejected based on items (*) above? 2

5. Inside stack dimensions 24"X24"

6. Outside stack dimensions 40" X40"

7. Is chimney top suitable for sealing the insert?

8. Is there a buildup of soot inside stack? ?

9. Study site and decide on scaffold, supports, etc., needed for test. NO

List below or on separate page with sketch. Demensions as required.

10. Can spark arrestor be removed? SPECIFY METHOD OF REMOVAL WIRE CUTTERS

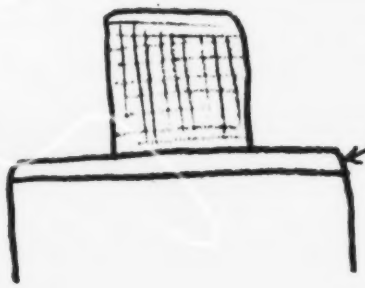
Remarks

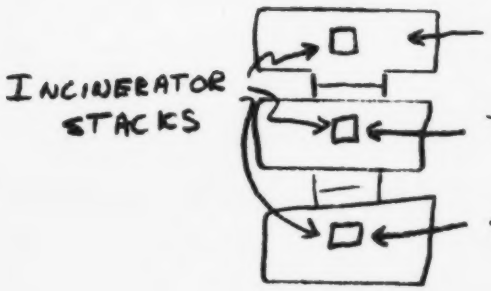
DRAW DIAGRAM OF STACK, SHOW HOW SPARK ARRESTOR IS ATTACHED AND NOTE IF THERE WILL BE OBSTRUCTIONS TO SEALING THE INSERTS

I.D. 2' X 2'

O.D. 40" X 40"

HEIGHT 15'




NO SPARK ARRESTOR, FAIR CONDITION

THIS STACK IN FAIR CONDITION
MORTAR A BIT UNEVEN. CAN BE FILLED.

STACK NOT STRUCTURALLY SOUND
UNEVEN MORTAR ON TOP.

185
McCLELLAN AVE.

DOWN #1

## PRETEST INCINERATOR INSPECTION

NYC Certificate of Operation: ____ Yes ____ Year ✓ No

Incinerator Manufacturer: KERNERATOR

Model No.: —

Type: ____flue fed or ✓direct fed

✓single chamber or ____multiple chamber

____single flue or ____double flue

Volume of Chamber: ____cu. ft.

Grate Area: ____sq. ft. NO GRATE

Charging Gate: ✓yes ____no

Primary Gas Burner (s): ____yes ✓no Firing Rate: ____CFM

Gas Auxiliary Burner (s): ____yes ✓no Firing Rate: ____CFM

Gas Scrubbers: ____yes ✓no; rated capacity____cfm@1600°F

Automatic By-Pass Damper: ____yes ✓no

Cycling Clock: ____yes ✓no

Ventilation: louvre (s): ____yes ✓no area____sq. in.

door (s): ✓yes ____no area____sq. in.

window (s): ____yes ✓no area____sq. in.

fresh air duct: ____yes ✓no area____sq. in.

fresh air fan: ____yes ✓no

overfire air fan & nozzle system: ____yes ✓no

Height of refuse during normal burn (estimate) 4 ft. above ☑ below ☐ FROM FN bottom of door.

Can 1/4" hole be drilled in breaching at furnace outlet? ____yes ✓no

Can stack test be performed in basement? ____yes ✓no

Condition of Equipment: NONE

# APPENDIX F

# ADDITIONAL BOILER TEST RESULTS

# RETEST OF FOUR APARTMENT HOUSE BOILERS

# IN NEW YORK CITY

## Introduction

These additional tests were initiated and conducted entirely by the New York State Department of Environmental Conservation and are not considered an official part of an earlier study for the U.S. Environmental Protection Agency. The purpose of these tests was to measure the emissions from four of the same boiler sites tested during the previous study to ascertain if emissions from these sites during colder weather would differ substantially from the earlier results. The testing procedures employed were identical to those in the 1973 series of tests but Bacharach readings, fuel oil temperatures and boiler room temperatures were not recorded. Fuel samples were taken and analyzed for sulfur, ash, and BTU content.

## Discussion

These stack tests were conducted during February, 1974. The average ambient temperature recorded by the test personnel was 36°F which is slightly warmer than normal for February in New York City but colder than the ambient temperatures experienced during the 1973 series of tests.

While four tests are insufficient for a statistical determination, a trend is evident in the tabulated emissions which follow. Three of the test results show an increase in pollutant mass rate (lb/hr) which would be expected when oil consumption increases. The measured particulate concentrations (grains/SCF) also show an increase, as does the particulate emissions expressed in pounds per 1000 gallons of fuel. Only one site, A4MPB, revealed a decrease in emissions. At this site, the management has made control panel alterations which have changed the operation of the boiler since it was tested in 1973. The full extent of the work performed is not known but the changes appear to have lowered the particulate emissions.

## Summary

The results of only four tests are insufficient data upon which to base conclusions affecting the results of the 1973 series of tests. They do provide sufficient reason to suspect particulate emissions from apartment house boilers in New York City may increase during colder weather. The cause of the increased emissions may be due to decreased combustion efficiency at higher firing rates, increased stack velocities, poor maintenance during the previous year, or a combination of these or other unidentified factors.

## Test Personnel

Neil Isabelle
Burt Pine
Ellis Johnson
Donald Daoust
Bruce Neddo
Carlos Morales
Harold Avery
Kenneth Cabiness

| SITE CODE | FILTER Gr/SCF @12%$CO_2$ | FILTER Lb/Hr | TOTAL Lb/Hr | FILTER Lb/$10^6$BTU | FILTER Lb/$10^3$Gal | TOTAL Lb/$10^3$Gal | Gal/Hr Fuel |
|---|---|---|---|---|---|---|---|
| A4MPB | 2-27-74 | | | | | | |
| 1 | 0.078 | 0.89 | 2.40 | 0.150 | 21.5 | 58.0 | 41 |
| 2 | 0.095 | 0.82 | 2.01 | 0.142 | 20.5 | 50.3 | 40 |
| 3 | 0.091 | 1.03 | 2.19 | 0.171 | 24.5 | 52.1 | 42 |
| Avg. | 0.088 | 0.91 | 2.20 | 0.154 | 22.2 | 53.5 | 41 |
| | 4-14-73 | | | | | | |
| Avg. | 0.124 | 1.35 | 2.12 | 0.290 | 42.1 | 65.8 | 32.2 |
| C1BHB | 2-14-74 | | | | | | |
| 1 | 0.037 | 2.75 | 6.88 | 0.076 | 10.9 | 27.3 | 252 |
| 2 | 0.028 | 2.05 | 7.20 | 0.057 | 8.3 | 29.0 | 248 |
| Avg. | 0.032 | 2.40 | 7.04 | 0.067 | 9.6 | 28.2 | 250 |
| | 6-27-73 | | | | | | |
| Avg. | 0.026 | 0.50 | 1.92 | 0.035 | 5.1 | 19.6 | 98 |
| D1MPB | 2-12-74 | | | | | | |
| 1 | 0.113 | 0.33 | 0.49 | 0.138 | 20.0 | 30.0 | 16.4 |
| 2 | 0.123 | 0.29 | 0.50 | 0.114 | 16.6 | 28.6 | 17.5 |
| **3 | 0.205 | 0.57 | 0.78 | 0.201 | 29.2 | 39.7 | 19.6 |
| Avg. | 0.147 | 0.40 | 0.59 | 0.151 | 21.9 | 32.8 | 17.8 |
| | 3-27-73 | | | | | | |
| Avg. | 0.027 | 0.13 | 0.25 | 0.056 | 8.1 | 14.8 | 16 |
| U4MPB | 2-26-74 | | | | | | |
| 1 | 0.184 | 1.28 | 1.68 | 0.240 | 34.7 | 45.8 | 36.8 |
| 2 | Test rejected - Abnormal probe wash | | | | | | |
| *3 | 0.190 | 1.24 | - | 0.243 | 35.1 | - | 35.4 |
| Avg. | 0.187 | 1.26 | | 0.242 | 34.9 | | 36.1 |
| | 5-11-73 | | | | | | |
| Avg. | 0.079 | 0.47 | 0.68 | 0.123 | 17.5 | 25.7 | 26.4 |

*Total catch rejected - Impinger catch contaminated
**Higher Ringelmann readings observed during this test run

Overall averages of these four sites:

| | | | | | | |
|---|---|---|---|---|---|---|
| -1974- | | | | | | |
| 0.114 | 1.13 | 2.68 | 0.153 | 22.1 | 40.1 | 74.9 |
| -1973- | | | | | | |
| .064 | 0.61 | 1.24 | 0.126 | 18.2 | 31.6 | 43.2 |

| SITE CODE | AVERAGED ORSATS | | | Average Ringelmann | Ambient Temp. @10a.m. | FUEL OIL DATA | | |
|---|---|---|---|---|---|---|---|---|
| | $CO_2$ | $O_2$ | CO | | | Heat Value BTU/Lb | Ash Content % | Sulfur Content % |
| A4MPB | | | | | | | | |
| 2/27/74 | 2.6 | 16.5 | - | 0.5 | 31 | 19073 | 0.05 | 0.24 |
| 4/14/73 | 3.0 | 14.5 | 0.4 | 0 | 45 | 19100 | .004 | 0.29 |
| C1BHB | | | | | | | | |
| 2/14/74 | 3.8 | 15.5 | - | 0 | 39 | 19125 | 0.02 | 0.26 |
| 6/27/73 | 1.6 | 19.1 | 0.1 | N.A. | 69 | 19220 | .006 | .29 |
| D1MPB | | | | | | | | |
| 2/12/74 | 4.9 | 14.0 | - | 1 | 30 | 19256 | 0.003 | 0.25 |
| 3/27/73 | 7.0 | 10.7 | 0.5 | N.A. | 46 | 19278 | N.A. | 0.33 |
| U4MPB | | | | | | | | |
| 2/26/74 | 5.3 | 13.3 | - | 1.5 | 30 | 19186 | 0.02 | 0.26 |
| 5/11/73 | 5.4 | 13.4 | 0.5 | 0-3 | 61 | 18930 | 0.123 | 0.39 |